THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

The Publisher's Farewell.

SIX and a half years ago the plan of THE HORTICULTURIST was matured and brought before the public. Many of its supporters and subscribers have been so from the commencement, and are familiar with its history; and all know the melancholy fatality which renders its removal expedient. It now goes into other hands, but its mission and its sphere are unchanged. We bid it not adieu; for we trust to meet it often—and greet it as a powerful co-laborer in the cause of rural improvement. It has begun a good work, and got strong hold on the good will of all who have been familiar with its pages.

THE HORTICULTURIST was a pioneer work, and has held its ground almost without competition. It has formed a taste for the scientific pursuit of Horticulture in all its branches, and has exerted no inconsiderable influence in placing the arts of taste upon a new basis. The design of this Journal has proved to be one of those happy thoughts, which come only now and then, and lead one to wonder why it had not occurred before—a thought which, though new, strikes favorably upon public sentiment, and soon becomes as common property, as though it never had an originator. The extent to which the editorials in The Horticulturist, have been copied, and the high eulogiums which have everywhere been passed upon them, prove this to a demonstration. The united voice of the country has uttered no unmeaning to tribute to the memory of Mr. DOWNING. Every one felt that a tongue, eloquent of beanty, and a pen powerful of good, were motionless, and all became more fully conscious of the influence which had silently but surely been exerted on them, and discovered numerous ways in which this influence had wrought out improvement and added to the sum of happiness. Such sad occasions afford epochs from which one dates back and reaches forward, anxious to gather, in the teachings of the past, hope and encouragement for the future.

It is said that he who rescues a principle from oblivion, or starts a new one into

life, and brings it home to the hearts of his fellow men, is more a benefactor of his race, than he who defends the rights of his country, or fights its battles. This being the case, Mr. DOWNING and THE HORTICULTURIST, are inseparably connected with the refinement and prosperity of our country; for as are the homes of a people so are their lives. It is true that when the political and ecclesiastical history of this century is written, the name of DOWNING may not appear, but in that unwritten history of social progress, in the councils of the fireside, which often stamp the character of the man upon the child—in the record of the posthumous judgment of future years we shall find that he was the champion of

"a truth,
Which woke to perish never."

A beautiful home, as an antidote to the restless roving tendency of the times,—the love of nature instead of the ambition of display—the culture of the mind and the soil, instead of the perilous haste to be rich—these are the principles which distinguish Mr. DOWNING and THE HORTICULTURIST.

The Horticulturist has done more than to inculcate the principles of taste and teach the pleasures of rural life. It has been a scientific and practical work, and by exciting a generous rivalry among gardeners and amateur cultivators, has raised the standard of Horticulture and increased the number engaged in its pursuit. To be assured of this, one need only refer to the reports of Horticultural exhibitions in the early volumes, and contrast them with those of the present year. The competitors, the varieties of fruits, flowers and vegetables grown, and the products, have increased four-fold—and we are only new beginners. One needs a prophetic vision to say what the future of Horticulture in this country is destined to be. Favored, as we are, by soil and climate, we may certainly anticipate brilliant results.

As we have before intimated, THE HORTICULTURIST will have our best wishes in the future, as it has had our best efforts in the past. We shall rejoice in its success as arguing well for the stability of society, and affording a well grounded hope for the permanence of our institutions. We shall watch its progress as a sure evidence of the spread of general refinement, and a proof that the germ of a healthy, social American character, which has so auspicously put forth its shoots, is springing up into fresh life and beauty, and promising a maturity rich in good things. We have full confidence that those who are, hereafter, to have this journal in charge will sustain in a good degree its high reputation and deserve well of its former patrons.

With sincere thanks to all those who have sustained the Horticulturist by their contributions and subscriptions, we commit it to other's hands and other's watchfulness, trusting that it will long be sustained to accomplish its mission and spread beauty and happiness over our land and in our homes.

OF WHAT USE IS RURAL TASTE?

BY B. MUNN, NEW-YORK.

Strange, but not less true, are the inconsistencies of human nature! While most of us are ready to admit the limited extent of our knowledge, how different is our practice from our theory. In the face of this free admission on our part, are we daily arguing, aye, and acting too, upon immatured thoughts, drawing conclusions from false premises, and regulating our conduct upon them, as though our hasty opinions were the unerring decisions of minds possessed of infallible wisdom.

We have been led into this train of thought from the circumstance, that it is not unfrequent still to hear the question asked, "of what *use* is rural taste." It will be found that the inquiry proceeds either from those who have not devoted, perhaps, an hour to the consideration of the subject, or whose position in life has not afforded them opportunity for the observation, much less the appreciation of the amenities of country life, and the attractions of rural beauty—now it might well be supposed that the advantage, or "*use*" of rural taste is so apparent, as a means to an important end, that this truth would occur to the mind as quickly as thought presents the question to it. Experience tells us this is not the case, and therefore, we propose to discuss it.

Let us, however, before we proceed to answer the question, thoroughly understand what we are about to discuss; and ask the previous question, what do we mean by "rural taste?" For few things conduce more to the elucidation of an argument, than a distinct apprehension of the subject at starting.

By "rural taste," then, we mean that perception of the combination of beauty *with* utility, in adapting the wilds of nature to the wants of civilized life, which is agreeable to our feelings. So that each natural feature when brought into the foreground of our observation, may be so presented to us, that whilst it is made subservient to our purpose, it at the same time is introduced under a pleasing aspect.

Let us now proceed to our principle inquiry, "of what *use* is rural taste?"

It is not too much to advance, if we assert that rural taste is itself a necessary adjunct to civilization, the advantages of which the purest utilitarian will admit and advocate. For the practice of rural taste is only the application to rural economy to the very same principles which in city life we regard as too completely matters of course to admit of question. From what source have originated the palace residences of our city merchants, with their gorgeous furniture, their tapestried carpets and their embroideried hangings, but from the indulgence of that taste in domestic affairs, which when directed to rural economy expends its energies in drawing out the beauties of nature for our admiration—while we apply her productions to our use, instead of (as in the former case) availing ourselves of the discoveries of art. Yet, however much we may hear the prudence of particular individuals, called in question, for lavish expenditure upon their town residences, we seldom hear the propriety or the utility of the elegancies of life which they possess, called in question; unless it be by some cynic whose jaundiced eye and ill regulated mind, has been distorted by the suggestions of avarice, or by some pharisaical enthusiast, who seeks to find a merit in refusing the enjoyment of those results of the skill of his fellow men, which the conventionalities of social life have provided for his use.

Let it ever be borne in mind, that the lavish expenditure of the man whose diligent labor has given him the means of surrounding himself with a large portion of the luxuries of life, is the stepping stone to riches for those of his fellow countrymen whose handiwork his liberality purchases. The ascetic miser may by niggardliness increase his ability for

accumulating in the eyes of his associates; but, it is the man who receives with one hand, to spend *prudently* with the other, that in every social community, is the advancer of the wealth of his country. Because he, it is, that in so doing, provides the market for the labor of industry, and the money to pay the well earned wages of the gifted artisan.

But do these principles apply to the question before us? Undoubtedly they do, for if it be conceded that these conveniencies of life are proper, and tend to the increase of national prosperity when applied to city life, they will be found equally true when directed to country life and rural taste. Because in the latter case as in the former, it is impossible to put them in practice without some expenditure, be it greater or less, which again affords the means of livelihood or of increased comforts to those engaged in the production of its refinements.

There are other considerations of equal and even of greater weight, which evince as distinctly the "*use*" of rural taste. Diligence and activity of body and mind are no less beneficial to us, in the persuit of our innocent amusements, than they are instrumental to our prosperity in business occupations; and whether we turn our thoughts to the private gentleman, or to the merchant retired from busy life—to the farmer, or to the artizan in his cottage, we shall not be disappointed in our expectation, if we calculate upon finding that each one, who employs his leisure hours, be they many or few, in the embellishment of his country home, adds thereby daily accessions to his stock of health, while he at the same time imparts renewed elasticity to his mental energies by their healthy exercise in his favorite pursuits. And we are sure it will be granted that to add increased health to body and mind is *to make good* "*use*" of our time, whatever be its employment.

Another and a great "use," (the importance of which it is scarcely possible to overestimate,) in the cultivation of rural taste, is to be found in the powerful influence which experience bears testimony to its exercising, over the social intercourse of a neighborhood. We could, in support of this view, instance numerous parts of our country which, happily, are ever present proofs of its truth. The kindly relations, the good offices, and the interest in each other's rural enjoyments, which the practice and extension of rural taste in any neighborhood, never fails to draw forth, are ample proofs, that if it be commendable "to love one another;" to contribute to the comforts of our neighbors; and to associate our rising generation with a state of things around them that is calculated to call forth their study of the adaptation of nature to the social wants of man: if these objects are commendable, then rural taste has its "use."

Moreover, if we have failed to convince by our arguments, we have only to appeal to the unerring evidence of the history of the world, to find a proof that there is a "use" in rural taste. For that, be it what it may, which experience shows to have been a constant requirement of every succeeding generation of man, must, by us in our generation, be admitted to be a *want* of the human race. And that which supplies a want which has proved so constant as to be universal in its extent, must be admitted to have its appropriate use. From the garden of Eden to the gardens of Solomon, who "planted himself vineyards, and made gardens and orchards, and planted trees in them of all kinds of fruits, and pools of water therewith, to water the wood that bringeth forth trees;" and again, from the hanging gardens of Babylon to those of the Athenians, (who Meason observes "preferred a residence in the country, and *in villa gardening* borrowed from Asia Minor,") the evidence of history, both sacred and profane, bears one continued stream of testimony to the love for and pursuit of rural taste. The direction of it, has varied with time and place, but its influence upon man has been as continuous as the return of the seasons.

B. MUNN.

DR. HULL'S PAPER ON STRAWBERRIES AND THEIR NUTRITION.

BY SAMUEL W. JOHNSON.

The agricultural and horticultural publications of the present day, are teeming with the applications of science to the processes of husbandry and gardening. This is a fact of happy significance, and indicates how deeply the true means of advancement have taken hold, in the intelligent mind of the community.

Ordinary experience is the most usual, and an invaluable means of attaining excellence in the art of vegetable production.

Extraordinary experience or experiment, is a necessary adjunct to the former.

It is easy to make experiments and to multiply observations. It is just as easy to speculate upon them: but to make complete and *exhaustive* observations, and to plan and conduct strictly pertinent experiments, is quite another thing; as is likewise the arrival at TRUTH, which, to even the most patient and profound, often is liable to be confounded with speciousness.

Dr. HULL has made experiments, and written a lengthy article on the "nutrition of strawberries." I propose to inquire dispassionately—what are the merits of his investigations?

The article opens with a quotation from Prof. EMMONS' "*Agriculture of New-York*," as follows: "The soil must possess all the inorganic substances, as well as organic, which are essential to the perfection of vegetables; if any one is wanting it must be supplied."

It will be necessary to remark somewhat upon this statement of Prof. EMMONS. It is in a sense true, and is true as Prof. EMMONS intended it to be understood, yet standing alone, it is capable of gross misconstruction.

The soil must contain all the *inorganic* substances that are essential to the growth of the plant, or the plant will refuse to mature. It must also contain all the organic *elements* of the plant in order to a *profitable* growth, but to grow the lemon, it must not necessarily contain citric acid, because citric acid is essential to the perfection of the lemon; nor need it contain morphine to produce the poppy, although morphine is essential to the perfection of the poppy plant.

In addition to all the inorganic substances of the plant, the soil must contain a quantity of decayed vegetable matter, in order to make it profitably fertile.

Such I deem a true expression of the sense of Prof. EMMONS' proposition.

Dr. HULL remarks substantially, that although this rule is apparently true, and conforms to common sense; yet in its ultimates it admits of exception.

He states the ground of exception as occurring with reference to *tannic acid*, and alludes to other data bearing on the point, which disclose "evidence of the caprice of plants in imbibing nutrition at proportional variance with their analysis."

He says, further: "These discrepancies from the general rule, and the desire to awaken inquiry and experiment to the highest degree, in order to mature the finest fruit, have rendered me a little presumptuous, perhaps, in suggesting another rule of specific nutrition:

"*That some fruits—whatever the organic or inorganic analysis of the plant or of the fruit may disclose and seem to require—possess one or more special constituents, each one of which is demanded as an increased, correspondent, and specific nutrition that bears no proportion to that of the exact analysis.*"

As I understand the above, it implies that certain plants flourish best when supplied with one or more ingredients in quantity greater than indicated by their composition. This is undoubtedly true in some instances. From the experiments of Prof. WAY, it appears probable that ammonia is a means of supplying silica to plants, and therefore may be required in much larger quantity for the growth of highly silicious plants than would be indicated by the nitrogen found in the mature plant. But our present object is to examine Dr. HULL's proofs for his presumed rule. His first statements refer to the inorganic ingredients of the strawberry. Three analyses are quoted, one of the fruit, and two of the plant.

His brief observation, on these analyses, which I need not quote, is sufficiently true—that in "the two analyses of the plant, the analysts coincide in the proportion of the potash: the discrepancy as to the other constituents is striking. In the analysis of the *fruit* by *Richardson*, the predominance of *soda* will excite some surprise, although the *potash* holds a second and very important position. At the same time the united analyses of plant and fruit exhibit as the proportion of potash, 59.72, and that of soda only 36.28." I may add that the analyses show in round numbers from 9 to 20 per cent. of *phosphoric acid*, and 12.26 per cent. of *lime*.

"*Affirmative* of the general rule," an experiment is adduced as follows: Last year, "a large bed was prepared and divided into three equal portions; one containing *potash* neutralized by muck; another *ashes*, treated in the same manner; and last *phosphate of lime*, (bone dust.) Lines of the same plants, extended across the three soils. Boston Pine," and 14 other varieties, "displayed a sturdy growth throughout this entire triple tract; at the same time they exhibited a positive preference for the potash over the ashes; for the ashes over the bone-dust. The section of the triple tract, charged with potash, manifests an advantage this season much more conspicuous, the plants and fruit having gained at least one-fourth over their associates."

In the preceding experiment, certain varieties furnish different results, which Dr. HULL considers "exceptions to the general rule." "Black Prince and Burr's New Pine became almost worthless in the same potash tract; while runners of 1850, transferred from these same plants to the natural soil of my ground, well enriched with ordinary stable manure and street sweepings, have this year produced specimens of fruit nearly, if not quite equal to their best reputation. Buist's Prize also failed under potash nutrition, and devloped the richest foliage and finest fruit in the department of phosphate of lime (bone dust.) Hovey's Seedling failed in a tract of phosphate of lime, yet rejoiced with its luxuriant foliage and fruit in a tract of soil, supplied with *lime* as its main element."

Reference is next made to a recipe for keeping old strawberry beds in bearing, from the *Friend's Review*. The application, attended with remarkable results, was as follows:

"Of nitre, of potash, of glauber's salt, and sal soda, each one pound; of nitrate of ammonia, one-quarter of a pound—dissolved in thirty gallons of water. One-third was applied at a time," to a bed 30 feet by 40. Three applications being made at intervals of a week. Frequent waterings of soft water, were also used in dry weather.

Various statements are next noticed, from Prof. JOHNSTON's lectures, with regard to the efficacy of potash and soda.

Dr. HULL concludes from these data, that "the results confirm in the main, the general rule for specific uniform nutrition. Potash, the major element of the analysis, holds the highest representation in the production of plant and fruit; ashes, (potash and lime—the latter, also, an important substance in the analysis) present the next claim, and phosphate of lime (holding a questionable or minor place in the analysis) produces the least satis-

factory impression. Yet the careful observer will perceive, that the *potash* alone, is quite equal to all the requirements of the plant in the department of inorganic constituents, and even here enforces its place as one of the special constituents, which is demanded as an increased, correspondent and specific nutrition, that bears no proportion to that of the exact analysis."

Let us see. The potash of the analysis of the strawberry is, or ought to be, chemically pure; that of Dr. HULL's experiment, was commercial potash, containing all the soluble constituents of wood ashes, sulphates, carbonates, phosphates, and silicates of potash and soda, together with salt of lime and magnesia, and chlorine. This potash, itself containing nearly every inorganic ingredient of the strawberry, is neutralized with muck, which presents the same inorganic composition as wood ashes, and in addition, a large per centage of organic matter.

Dr. DANA says that the addition of potash to muck, furnishes a material equal in all respects to cow-dung, so that the plants which flourished so admirably under "potash nutrition" were supplied in addition to the substances contained in the soil, and no doubt abundantly, with a manure, including all the inorganic, and all the organic substances requisite for the most perfect production! It is easy to see that Dr. HULL's potash is synonymous with *good stable manure*, and "alone, is quite equal to all the requirements of the plant in the department of *inorganic* constituents," &c.

It is not surprising that ashes, treated with muck, should be less valuable than potash, if used in equal proportion, because they contain less soluble matter; and mere bone-dust cannot be supposed to exert the beneficial action that is exhibited by a manure abounding in more soluble phosphates, and all other required ingredients.

In the case of the application of nitre, potash, glauber salt, sal-soda, and nitrate of ammonia, we have potash, soda, and ammonia; sulphuric, nitric, phosphoric, silicic, and carbonic acids. Quite a variety of nutriment, the main efficacy of which is probably due to ammonia and nitric acid; at any rate there is no reason to ascribe it exclusively to potash and soda, as seems to be done by Dr. HULL.

The exceptional cases are in some sense interesting. It is useless to speculate upon the causes of the apparent anomalies, without a basis of repeated and comprehensive experiments, made with a full knowledge of the conditions that may affect their accuracy.

Reserving to the close of the article, some further observations suggested by this part of the subject, I shall notice briefly Dr. HULL's remarks on the organic nutrition of the strawberry. He quotes an analysis, representing the organic constituents of the strawberry to be "*citric* and *malic acids*, and a large proportion of *mucus sugar*." This mucus sugar is undoubtedly a mixture of *grape sugar*, and some combination of *pectic acid*. Dextrine and woody fibre must be added to the list on analogical grounds. The analysis is obviously incomplete.

Dr. HULL, on the authority of Prof. MAPES, adds *tannic acid* to the list of ingredients. Prof. MAPES asserts, that it exists "in the cortical or external surface of the fruit, that he has detected it by subjecting a *large* quantity of these surfaces to the appropriate chemical tests. He attributes the flavor and fragrance of the strawberry to the specific property of this acid, and has found tan-liquid, a most valuable watering for the plant."

Dr. HULL adduces various instances of the beneficial effects of tan-bark as mulching, and of tan-liquid as a watering. He assumes, with Prof. MAPES, that *tannic acid* is a specific nutrition for the strawberry.

Every chemist knows that a solution of one part of per-chloride of iron in 200,000 parts of water, gives a characteristic blueish-black tint with tannic acid, and that the 800,000th

may be detected. I know no reason why the converse of this statement is not true—why one two-hundred thousandth part of tannic acid may not be detected by the salt of iron. If with this exceedingly delicate means of discovering tannic acid, Prof. MAPES, could only find it by using a *large* quantity of the cortical surface of the strawberry, it may be questioned whether the tannic acid has a very large influence on the flavor of that fruit! Tannic acid is however readily detected in the leaves and stems of the strawberry, as I have this day observed, by the use of the above mentioned test. Still the quantity is small, as nothing of the intensely bitter taste of tannic acid can be perceived. In order to test this predicate, (Prof. MAPES' presentation of *tannic acid* as a constituent of the strawberry,) and the comparative powers of the citric and malic acids, as "nutrition for the strawberry," Dr. HULL made a series of experiments, on "three rows of each variety, of four different kinds of strawberries, which traverse his triple bed of inorganic manures. The liquids were applied from May 18th to June 23d, twenty-five times. The liquids were:—

Tannic acid—in the fom of tan-brark liquor, one gallon to one hundred of water;
Citric acid—juice of one lemon to four gallons of water;
Malic acid—one pint of cider to four gallons of water;
Manure water—manure liquid of the barn-yard;
Poudrette water."

I must refer the reader to the August Horticulturist, for the details of these experiments. The general result was that the tan-liquor produced the best yield always, as regards quantity, and generally with respect to quality.

This result has its practical value, which cannot be denied; but has it received the correct explanation? Without assuming to give the correct explanation on so insufficient data, I beg to indicate some reasons, that in my mind show that it is yet unproved, that tannic acid has produced these effects. I do not deny that it may be the principal agent; but I conceive that Prof. MAPES' assertion, though having a degree of plausibility, remains to be demonstrated.

What is Dr. HULL's *tannic acid*? Is it the very nearly pure substance? It is tan-liquor—whether fresh or spent, furnished by oak, hemlock, sumach or catechu, he does not tell us!

May there not be many other substances present in it besides tannic acid? We know that the bark of trees is rich in inorganic bodies. Can they be excluded from participating in the effect? The ready passage of tannic acid into gallic acid is well known. Is it not worthy of consideration? It has recently been discovered in the Giessen laboratory, that tannic acid is a compound of gallic acid and sugar, and since it readily decomposes into these two bodies, they may with as much propriety be concerned in the nutrition of the plant. However, we know nothing about it.

In two cases, the strawberries in Dr. HULL's experiments, that he fed with *malic acid*, were adjudged to possess the highest flavor. What *is* Dr. HULL's malic acid? Cider! containing, according to Dr. Salisbury's analysis, alcohol, sugar, dextrine, malic acid, *phosphates* and *sulphates of the alkalies*, with a little tannic and gallic acids.

Says Dr. HULL—"Here arises an important inquiry—how much of the flavor allowed to the malic acid, must be attributed to the tannic acid which the cider contained?" It may not, perhaps, be irrelevant to inquire what part of the flavor of cider, or of cider apples, may be due to tannic acid?

What effect may the alcohol, sugar, and alkaline, phosphates, and sulphates have had on the strawberry flavor?

Dr. HULL does not specify the age of his cider, a matter of much importance; for it is well known that malic acids and its salts easily enter into decomposition.

Tannic acid is adduced by Dr. HULL, as one of those substances that "is demanded as an increased, correspondent and specific nutrition, that bears no proportion to the exact analysis," because the strawberry contains but a trace of it, while it seems to be so largely appropriated by the plant.

But where is evidence that tannic acid has any thing to do with the nutrition of the strawberry? Have not other cultivators produced strawberries equaling those of Dr. HULL, without application of tannic acid?

I conclude, therefore, that Dr. HULL's experiments furnish no satisfactory evidence of the truth of his closing statement, that the practical cultivator *can* perfect the finest fruit in abundance and richness, by selecting potash from among the inorganic, and tannic acid from among the organic constituents of this delicious gift from the "Giver of all good." At the same time, abundant testimony is furnished of the efficacy of tan-bark as a mulching, and of "potash neutralized with muck," as a fertilizer.

However valuable Dr. HULL's experiments may be, practically, they are entirely too vague to have any effect in establishing theory.

His fertilizing applications are either of very complicated, or of almost unknown composition. Necessarily the quantities of each are also unknown. The soil is unanalysed. Organic and inorganic manures are used on the same plants. The physical and physiological conditions of the plant are not taken into the account. In fine, the sources of error are so numerous, and so little understood, as to be incapable of elimination.

Thus much of criticism, I have thought due to rational culture, and conclude by expressing a hope that I have not misunderstood nor misrepresented Dr. HULL's statements.

SAMUEL W. JOHNSON.

Deep River, Lewis co., N. Y., November, 1852.

ON THE PELARGONIUM.

BY AN AMATEUR FROM ENGLAND.

I am one of those who have been, of late years, in the habit of growing that magnificent flower, the Pelargonium, for exhibition at the Horticultural Societies in London, where those who have attended them, know the engraving that you have given to your readers in volume 5, page 201, of the Horticulturist, is by no means an exaggerated representation of the general character of the geraniums produced there. I long to see this, my favorite flower, grown in the same state of excellence in this country, and I by no means despair of having that pleasure; for I was gratified to see some specimens at the exhibition of the New-York Horticultural Society, at Metropolitan Hall, in June last, which, although very far behind the standard of perfection which I am desirous to hold forth for attainment, were, notwithstanding, very fairly grown, and evinced in their general appearance an acquaintance with the plant, which will, I doubt not, enable the grower of them, whose name I do not now recollect, to progress to the highest excellence in their cultivation. I am happy to accord him my meed of praise; and I shall also be glad, if he should not happen to be acquainted with the details of English practice, if I can offer him any suggestions which can further his success.

I hope that upon those who are not aware of the beauties of this family of plants, the geraniums I have just been referring to, will have the effect of creating a desire to possess in their own green-houses and gardens similar specimens. For when properly

grown, the Pelargonium assumes an importance and produces an effect which is gorgeous in the extreme; and can only be equalled, by a few of the inmates of other families in our best collections.

They can be grown in the greatest perfection, without a great demand upon the time of the gardener; with only fire-heat enough to exclude frost; and by judicious pruning, and by propagation early in the season, the bloom can be prolonged over a lengthened portion of the year; and although not at all times in the same perfection, yet always with enough success to well repay the cultivator for his trouble.

I propose in this paper, to give a history of the improvement of the Perlargonium, during the last few years, which I think may interest the present amateurs of the flower, and show what may be done by perseverance and well directed experiments.

The modern history, if I may so call it, of the Pelargonium, may be said to commence with a flower, which some thirty years ago made a great sensation in the floricultural world of London, which was raised there, by a well known florist named DAVEY, and was called by him after himself, "*Daveyanum.*" It was a dark crimson variety, of small poor shape, and not equal in that respect to some others of the day, which had broader and more substantial petals; but the color was remarkably attractive, possessing a velvet gloss and depth of tint which was then novel and much admired. Davey, (who was an old florist, and well knew how to make the most of a good flower,) is said to have made a thousand pounds sterling by this geranium, which amount is probably over-rated, although my own acquaintance with what was done by some nurserymen, at the height of the Dahlia-mania in England, a few years ago, by no means renders the supposition of his having done so absurd. Another florist, about the same time, of the name of MOORE, brought out a flower which he called "*Victory;*" this was in shape and quality, much on a par with the Daveyanum, but in color it approached a scarlet, and possessed a good compact habit, and an elegantly shaped leaf, much like the common rose scented geranium. These two flowers, with a white variety, named Macranthon, were the giants of that day, although, I fear their pigmy character, in comparison with our present favorites, would give a very unfavorable impression to modern amateurs, of the tastes of their predecessors. About the year 1824, a flower made its appearance, which may be regarded as something like the first ancestor of the existing race of Pelargoniums. I do not mean to assert that such was literally the case; but that it bore some approach to those points of excellence which have since been improved upon, and brought prominently out in the flowers of the present day. This was a white flower called the "*The new Duchess of Gloucester,*" of the character of Macranthon, but so much better a flower, as wholly to supercede it. The amateurs were mad after it, and at three guineas a plant, it found among them ready purchasers; and so popular did it become, that I well remember finding in a nurseryman's, one day in the second or third year it was out, a green-house some 30 or 40 feet long, entirely filled with plants of "The new Duchess," and upon my remark at the large stock of one plant, he said he could find a ready market for as many more if he had them.

For some few years after this, no great move was made, to mark particularly the progress of the geranium culture; although each year brought out its new candidates for public favor, which they possessed in a greater or less degree according to their merits. At this day it is not fair to pass judgment upon them; so completely have our notions of the qualities of a really good Pelargonium, been revolutionized in this age of revolutions. Upon looking over a few dried specimens, which I preserved of the flowers of that day, (including among them the celebrated "Daveyanum,") I cannot say much in their favor.

One of the prettiest, which I recollect was a great favorite with me, although a small flower, was named "Queenii," in which the softened color of the petal added to a peculiarly neat habit of growth, combined to give an effect of elegance which was very engaging to a florist's eye. There was another, "Eldonii," which was one of the first that possessed the deep suffused blotch of color covering the whole of the upper petals, and which feature in our modern plants, forms one of their most marked characteristics: but that variety was not in other respects a bit better in quality than the others of the time.

About the year 1834 or 1835,(for I have no exact record of the date,) the floricultural world were generally surprised and delighted by the advance made in the culture of this family, by Mr. FOSTER, a gentleman residing at Clewes, near Windsor, some 25 miles from London, who it appeared had for some time directed his attention to hybridizing the perlargonium, and who then sent out his "Gem." This flower, with reference to its predecessors, was an enormous stride towards the shape that was desired, namely, a perfect circle; and to which it was a much nearer approximation than anything that had been seen before. The color was good, and the foliage and habit large, and every thing that could be desired. Two other flowers Mr. Foster produced, I think the same season, which, although not equal to his "*Gem*," were still such marked improvements as to excite much interest. But the "*Gem*" had one great fault, which, no less then than now, was considered fatal to its reputation. The petals "burnt," as it was technically called by the growers; that is a moderate share of sunshine caused a change of color and texture to take place in the upper petals af the bloom, just at the line where the deep blotch of color shaded off into the lighter colored margin. The great advance, nevertheless, in the the plant as a whole, and also as a variety from which to continue the course of hybridizing, created a great demand for it, and also induced many florists, both in and out of the trade to commence, what they had never before thought of, or else had regarded as too uncertain in its results to engage their attention, the systematic improvement of the flower by careful hibridization. There was another flower, which about this time made a great noise in the floral world, as the great man from whom it took its name did in political, namely "WASHINGTON." The color of it was a fine crimson, and it had the much esteemed quality of being a good one to force early in the season, for which reason it was much in request.

Mr. Foster's success, thus begun, did not forsake him. "*Alicea*" was the name given by him the following season, to a seedling which followed in the steps of his "*Gem*," as regards general good qualities, but of a distinct class as regards color. This flower was sent at the price of three guineas to the public; in stating which circumstance, it should be added, however, that it was generally understood in the fancy, (and I have no doubt that the fact was so,) that Mr. Foster, who is a man of property, did not sell his flowers, but gave the stock of his plants to a nurseryman under some restriction as to the time and mode of disposing of them; and that thus he was the founder of the fortune of one of the nurserymen of London, who is considered to have made an independence principally from this source, and certainly from its instrumentality.

The impetus given to the Pelargonium culture by these flowers, was very great, and thus it was that for the first time the specimens every year assumed an increased size, and in the high degree of culture which the engraved specimen in the "Horticulturist" referred to in the beginning of these remarks indicated.

I was myself at the exhibition at which that specimen was exhibited, and I can testify to the accuracy of the delineation, and the truthfulness of the general idea of the plant conveyed by it. The name of that variety was "*The Priory Queen*," and I passed my

walking-stick through the body of the flower just above the pot, and found that both ends of the stick, (which is within half an inch of three feet in length,) were concealed by the foliage. This was from front to back of the plant; the width was at least a foot greater in extent; so that some idea may be formed of the mass of magnificence which is presented to the eye. It was not, nevertheless, the size of the plant that gave it its importance so much as the more than ordinarily large quantity of flowers which had expanded at once. In point of size, other genariums both at that and many other exhibitions of the time were to be found. They were grown in very large pots, and indeed took up, from their magnitude so great an extent of space on the exhibition tables, that the two principal Horticultural Societies at London, about that time limited the size of the pots for the prizes offered for Pelargoniums, to eight or nine inches, with the view to discourage the continued extension of their magnitude, which was intruding too materially upon the claims of other families of plants, for room to exhibit their beauties.

To return from this digression to my historical sketch. Mr. Foster's success having as I have remarked, set others upon the scent, it was not long before they, like him, were rewarded by the addition of fine varieties. Mr. GAINES, a nurseryman, brought out many new varieties, some of which were very good, but many of little value, among which was one in his catalogue for 1838, now before me, he sent out at *five guineas*, a price that I well remember was thought at the time far beyond its merits. A clergyman of the name of GARTH, was one of the most fortunate; his "*Perfection*" was a much esteemed variety, and the circumstance of its flowers being supported upon *stiff* foot-stalks, which held them up erect above the foliage, a quality wanting in many of Foster's early flowers, which consequently had to be held in position by sticks, was a valuable acquisition. Every year now brought forward several really fine and distinct new varieties; and the emulation which arose between these, the two fathers of modern geranium growing, as they are fully entitled to be called, Foster and Garth, occasioned much interest to their admirers, as I doubt not it did to themselves.

So matters went on until it was first whispered (about in 1840,) and then announced by Foster's "publisher," (as we should say had it been a book,) in a flaming advertisement, that the philosopher's stone was discovered; that Mr. Foster had outdone himself, and that he had produced a flower that was the *ne plus ultra* of perfection. Intense was the interest and anxiety to see it; the price at which it was to come out, *five* guineas, was only calculated to add fire to the flame of the enthusiasm; while the name "*The Sylph*," served to re-engage in aid of his favorite pursuit, all the tender feelings which the amateur had been able to steal from his floricultural affection, to devote to the softer sex! I, for one, went off to Catleugh's place, (that was the name of Foster's nurseryman,) and never shall I forget the pleasure with which I first gazed on the mass of plants of the "Sylph," which he had congregated together, and which filled up a large space in one of his long green-houses. The character of the flower was decidedly new, the colors also, while the habit of the plant, when well grown, was unexceptional. At length this variety got into general cultivation, and great were the disputes as to its merits. While one part of the amateurs lauded it to the skies, another as unqualifiedly condemned it. The truth, as is often the case in a war of opinions, rested between the two. It was undoubtedly in many points a most desirable flower, and it had so distinct a character also, that its good qualities became the more valuable. On the other hand, while it flourished most luxuriantly with some, others could not get it to throw a good head of bloom. This arose principally, from its requiring rather more warmth than most geraniums, at one period of its growth.

It would be tedious to enumerate the names of one in twenty of the flowers, which succeeding years have introduced, but those I have above referred to, may be deemed to mark epochs in the history of the improvements of this splendid and now gorgeous family. I shall, in conclusion, do little more than record the names of the persons to whose industry and love for it we are principally indebted for the advanced state of beauty in which we possess it at present, by the ardor for carrying on, which I am glad to announce is in no way declining; for I am continually receiving from my old geranium friends in England, news of the "good things coming."

The next remarkable era, was the appearance of BECK, of Isleworth, then a new name to the admirers of the flower, but one which soon made itself respected. For Mr. Beck had a most fortunate run of success, and for some three or four years he originated varieties, which in a great measure, threw into the shade even Mr. Foster and Mr. Garth's productions; and he has from his first start, maintained up to the present time his standard of excellence. Mr. Foster, however, like a "good man and true," did not allow the more than ordinary success of his worthy competitor to damp his courage, and by steady perseverance he has regained his position, as one of the foremost champions of the present day, as he is the veteran who has uniformily borne the brunt and heat of the battle. During the last three or four years, he has brought forward some splendid sorts. One more name demands honorable mention too meritoriously, to be passed by. I mean Mr HOYLE. He has produced many excellent varieties; and the man who has given to the floricultural world such a flower as "*Hoyle's Crusader*," can well afford to rest upon his laurels and let others gather a wreath for themselves.

There are numerous others and very deserving growers, who well merit the large share of success that has attended their efforts; but having referred to the leading friends of the geranium, I must draw my remarks to a close. B.

APPLE ORCHARDS IN ENGLAND.

BY FRED. LAW OLMSTED.*

There are but few orchards in England, except in certain districts, and in these they abound, and are often very extensive. The inquiry naturally arises, What has given those districts their distinction in this respect? Have they any natural advantages which makes orcharding more profitable in them than in other parts of the country? In reply, I learn that the orchard districts are all distinguished for a comparatively mild climate. They are nearly all in the south and south-western counties, while in the northern and eastern counties I do not know of any. Hereford is a a somewhat hilly county, and, as I have remarked, where the hills are too steep for easy cultivation, it is usual to plant orchards; but the south side of such hills is preferred to the north, and, even here, a crop is sometimes entirely lost by a late and severe spring frost. A south-east slope is preferred, the south-east winds being the driest. I suspect another reason why it is found better, is that the south-west winds, coming off the ocean, are the stronger. My own observation has led me to think that the apple-tree is much affected by an exposure to severe winds. Most sorts of trees do not thrive very well upon the sea-shore, and this is usually laid to the account of salt spray or "salt in the air." It will be found, however, that trees grown inland

* From second series of "Walks and Talks of an American Farmer in England."

upon very exposed sites, have the same peculiarities with those in the vicinity of the sea; that is, they are slow of growth and *scrubby*.

Another important circumstance to be noticed, as distinguishing the apple districts, is in the nature of their soils. These are found, however, varying otherwise, invariably to have a large proportion of lime, and generally of potash, in their chemical composition. With reference to this I quote the observations of Mr. Frederic Falkner.*

"Great light has been lately thrown upon the adaptation of soils to particular plants, and it is now easy to account for the predilection, so to speak, of the apple-tree for soils that abound in clays and marls. All deciduous trees require a considerable proportion of potash for the elaboration of their juices in the leaves, and are prosperous, or otherwise, in proportion to the plentiful or scanty supply of that substance in the soil. Liebig has shown, that the acids generated in plants are always in union with alkaline or earthy bases, and cannot be produced without their presence. * * * Now the apple-tree, during its development, produces a great quantity of acid; and therefore, in a corresponding degree, requires alkaline, and, probably, earthy bases also, as an indispensable condition to the existence of fruit."

Again, the same writer:

"It cannot be denied that ammonia, and also the humus of decaying dung, must have some influence on the growth of the tree in such soils, and also in the development of the fruit; but it is most certain, at the same time, that these alone would be perfectly inefficient for the production of the fruit without the co-operation of (the alkaline bases.) The size and perhaps the flavor of the fruit may be somewhat affected by the organic part of the manure, but its very existence depends upon the presence in the soil of a sufficient quantity of those inorganic or mineral substances which are indispensable to the formation of acids."

But it is also found by analysis that lime enters into the composition of the *wood* of the apple-tree in very large proportions. By the analysis of Fresenius, the ash of the wood of the apple contains 45.19 per cent. of lime and 13.67 per cent. of potash. By the analysis of Dr. Emmons, of Albany, N. Y., the ash of the sap-wood of the apple contains of lime 18.63 per cent. and 17.50 per cent. of phosphate of lime.

But it is not wherever soils of the sort I have described (calcareous sandstones and marly clays) abound in a district, that you find that the farmers have discovered that it is for their interest to have orchards; nor are they common in all the milder latitudes of England; but *wherever* you find a favorable climate, *conjoined with* a strongly calcareous and moderately aluminous soil of a sufficient depth, there you will find that for centuries the apple-tree has been extensively cultivated. Evelyn speaks, 1676, of the apples of Herefordshire, and says there were then 50,000 hogsheads of cider produced in that county yearly. The ancient capital of modern Somersetshire, one of the present "Cider Counties," was known by the Romans as Avallonia, (the town of the apple orchards.) It would not be unlikely that the universal ceremony in Devonshire, of "shooting at the apple tree," (hereafter described,) originated in some heathen rite of its ancient orchardists.

To obtain choice dessert fruit, the apple in England is everywhere trained on walls, and in the colder parts it is usual to screen a standard orchard on the north by a plantation of firs. There is no part of the United States where the natural summer is not long enough for most varieties of the apple to perfect their fruit. In Maine, and the north of New-Hampshire and Vermont, the assortment of varieties is rather more limited than elsewhere, I believe; but I have eaten a better apple from an orchard at Burlington,

* Journal of the Royal Agricultural Society, vol. iv. p. 381.

Vermont, than was ever grown even in the south of England. We may congratulate ourselves then, that all that we need to raise the best apples in the world, any where in the northern United States, is fortunately to be procured much more cheaply than a long summer would be, if that were wanting. The other thing needful, judging from the experience of England for a length of time past record, in addition to the usual requisites for the cultivation of ordinary farm crops, is abundance of lime. This is experience; and science confirms it with two very satisfactory reasons: first, that apple-tree wood is made up in a large part of lime, which must be taken from the soil; and, second, that before the apple-tree can turn other materials which it may collect from the soil and atmosphere into fruit, it must be furnished with a considerable amount of some sort of alkali, which requisite may be supplied by lime.

There is but little else that we can learn from the English orchardists, except what to avoid of their practices. The cider orchards, in general, are in every way miserably managed, and the greater number of those that I saw in Herefordshire were, in almost every respect, worse than the worst I ever saw in New England. The apple in England is more subject to disease; and I should judge, from what was told me, that in a course of years it suffered more from the attacks of insects and worms than in America. The most deplorable disease is canker. This malady is attributed sometimes to a "cold, sour" soil, sometimes to the want of some ingredients in the soil that are necessary to enable the tree to carry on its healthy functions, sometimes to the general barrenness of the soil, and sometimes to the "*wearing out of the varieties.*" The precaution and remedies used by gardeners (rarely by orchardists) for it, are generally those that would secure or restore a vigorous growth to a tree. The first of these is deepening and drying the soil, or deep draining and trenching. The strongest and most fruitful orchards, it is well known, are those which have been planted upon old hop-grounds, where the soil has been deeply tilled and manured for a series of years, with substances that contain a considerable amount of phosphorous, such as woolen rags and bones. The roots of the hop also descend far below the deepest tillage that can be given it; (in a calcareous gravelly subsoil they have been traced ten feet from the surface;) a kind of subsoiling is thus prepared for the apple by the decay of the hop roots. In some parts it is the custom to introduce the hop culture upon the planting of a young orchard, the hops occupying the intervals until the branches of the trees interfere with them. Nothing is more likely than this to ensure a rapid and healthy growth of the trees.

I recommend to those who intend planting an orchard, to have the ground for it in a state of even, deep, fine tilth beforehand, and to plant in the intervals between apple or pear trees some crop, which, like hops, will be likely to get for itself good feeding and culture for several years. Peach trees, and dwarf apples (on Doucain stocks) and pears (on quince stocks,) answer very well for this, and will make a handsome return some years before the standard apples and pears come into bearing.

With regard to the richness of the soil, however, it is said that "although high and *exciting* modes of cultivation may flatter for a while by specious appearances, it is a grave consideration whether they do not carry serious evils in their train." This caution will remind the American horticulturist of Mr. Downing's recommendation to those planting orchards on the *over-deep and rich* Western alluvial soils, to set the trees upon hillocks. The danger apprehended is in both cases the same, that of too succulent growth. Mr. Williams, of Pitmaston, a distinguished English horticulturist, has found deficient ripeness of the young wood to be the prime predisposing cause of the canker. He recommends every year the shortening in of each shoot of the young unripened wood, which

he says will preserve trees of old "worn out" varieties, as "perfectly free from canker as those of any new variety."

An impenetrable bottom of stone, at not more than three feet from the surface, is frequently made as a precaution against canker. I have been told that in the ancient orchards attached to monasteries, such a flagging of brick or stone is often found under the whole area of the orchard. This would seem at first sight to be directly opposed to the other precaution, of thorough-draining and deepening the surface soil; but it may be considered that the injury which stagnant water would effect is in a degree counteracted when the roots do not descend below the influence of the atmosphere and the heat of the sun. It is not unlikely that these influences would extend to a depth of three feet from the surface, in a soil that had been so thoroughly trenched and lightened up as it necessarily must be to allow of a paving to be made under it. The paving does not probably much retard the natural descent of water from the surface, nor does it interfere with its capilliary ascent; the trenching makes the descent of super-abundant water from the surface *more* rapid, while the increased porosity of the trenched soil gives it increased power of absorption, both from the subsoil and the atmosphere, as well as of retention of a healthy supply of moisture. The paving also prevents the roots from descending below where this most favorable condition of the soil has been made to exist. The effect would doubtless be greatly better if thorough-draining were given in addition; but so far as it goes, the under paving and trenching is calculated to effect the same purpose as deep drainage; to secure a healthy supply of heat, light, and moisture to all the roots.

It is evident that the precautions and remedies which have been found of service against canker, whether operations upon the roots or the foliage, are all such as are calculated to establish or replace the tree in circumstances favorable to its general thriving, healthy condition.

This suggests the idea that canker may be the result of a general constitutional debility of the tree, not occasioned by any one cause or set of causes, but resultant from all and any circumstances unfavorable to the healthy growth of a tree; and it is a question whether the same may not be thought of the peculiar diseases of other trees, the peach, the pear, the plum, the sycamore, and perhaps even of the rot of the potato.

ON INDIAN CORN AND THE IMPROVED CULTIVATION OF LAND.

BY B. M., NEW-YORK.

In Agriculture and Horticulture, as in all other sciences, nothing is so well calculated to reward the practical man with a remunerating profit for his labor, as is *thorough* examination of the subject of cultivation, which, for the time, engages his attention. This observation will appear, possibly to many, to involve such a self-evident truism, as to be needless. It is nevertheless not so: for although it is quite true that every one engaged in the culture of land *intends* to give full thought and proper consideration to his subject, and supposes that he *not only intends* but actually *does* it, yet frequently this is far from being, in point of fact, the case.

In this rich country we possess thousands of acres of land, which require but little care to return us crops with which the grower is satisfied, as he gets a fair profit. And with this he is content. But this should not be all. The question is, *does he get from his land all that, with the time, labor and capital employed, it is capable of giving him?*

Whether, in fact, he has *judiciously* expended these upon the object to be attained. The answer to this question may be in the negative, without necessarily involving in it, any impeachment of the judgment of the agriculturist. For he may have exercised his calling in the matter, with all the judgment, and in the full exercise of all the knowledge he possesses. Wherefore, then, it may be asked, is it that the time, labor and capital has *not* been *judiciously* employed? The answer is, it has not been *judiciously* employed, if, upon a more extended knowledge of the subject, it shall turn out, that if the *same amount* of time, labor and capital had been *differently* applied, it would have yielded a larger return. The idea that the beaten track is the only one that can be followed, is no less in horticultural and agricultural pursuits, than in others, the enemy to progress. For, of what utility is the advance of science, and the discoveries of the chemist, unless they can be *practically* applied. The genius of a Fulton, or a Watt, would not have been less worthy of admiration, if prejudice or indolence had refused to apply steam to the uses of the manufacturer; nor would the ingenuity of a Stephenson have shown with less brilliancy if, in order (as some one once gravely proposed) to "keep up the breed of horses," we had refused to be conveyed from New Orleans to Boston by a locomotive engine. But had such follies been committed, the fact could not have been justified to the sound judgment of mankind, by a statement that the manufacturer, without his steam engine, got a remunerating profit, or that the journey from one end of the country to the other was performed as speedily as horses could do it. These principles are equally applicable to the horticulturist and to the farmer; and when applied to him, it will be perceived that the natural consequence resulting from them is, that *he* is lagging behind the manufacturer in intelligence, as well as in solid judgment, *unless* he takes care to appropriate to his *practical use* the discoveries made from year to year in the sciences allied to his calling, and varies his course according to their advance in the age in which he lives.

I have been led into these reflections by the perusal of a paper I met with in turning over the pages of the volume of the Transactions of the American Institute of the city of New-York for 1851, which has just been issued, upon the cultivation of Indian corn, by Mr. JACOB P. GIRAUD, Jr., of Bergen, N. J. In this communication I found that gentleman made, at the commencement of his observations, the remark that "a portion of the land employed" by him, "has, for the last *four years*, been under cultivation for this exhausting crop." This sentence, added to the intelligence indicated in the writer, by the general character of the paper, induced me to go to the Fair of the Institute, which was at the time open at New-York, to see whether any specimens of corn of the same person's growth were exhibited by him this year. I was gratified that I did so; for I found there a large collection of his, consisting of forty or fifty different varieties of corn, the production, as I was informed, of this very same land that had grown the four preceding crops mentioned in the Transactions referred to. I examined the corn carefully, and I found that the grains were swelled out and full to the end of the cob, showing that there had been no lack of food for the plants; and the ears were very large (in some varieties that I measured they were 18 or 20 inches long) and well ripened. Altogether the collection was the most complete and interesting of its nature, that I have ever seen.

These circumstances induced me to give the matter further consideration, and on turning again to Mr. GIRAUD'S communication in the Transactions of the Institute, I found a reference in it to a paper in the Transactions of a previous year, containing the detail of the system of culture under which these successive crops have been year after year obtained. In that account I find the statement, that the corn was grown on "clayey loam, and manured in the hill with guano and charcoal, in the proportion of one part of the former to

four of the latter, and the bulk of six table-spoonsful applied, (to each hill I presume) which is covered with from one to two inches of soil before planting. The seed is dropped about six inches apart at right angles, forming a square, with an additional seed in the centre, which, in case all germinate, is removed; more than four plants never being allowed to stand in one hill. The furrows are deeply drawn four feet apart." It is further stated that the ground is cross-plowed and hoed three times. At the second hoeing a handful of unleached wood ashes is distributed round each hill, and if the season should be wet an additional quantity may be advantageously used. At the second hoeing the ground is left level, but at the third a moderate hill is formed, so graduated that the elevation is only slightly perceptible. Mr. GIRAUD further states, "It is my custom, as soon as the corn is glazed, to top the plants at the first joint above the ears, and strip off all the leaves below them, which, when cured at this stage, I am of opinion, contain as much nutriment, as the entire stalk at the period it is usually cut, when topping is not practiced. The husking is performed on the field, and the cows turned in to eat the husks; thus leaving nothing but the naked stalks, which, as soon as the active farming operations are over are cut down, separating them at every joint, (when in large quantity a cutting machine may be used) and covering the field with them, they constitute what I consider a tolerable coating of manure; thus returning to the soil a portion of what it had produced; and if answering no other purpose than that of assisting to keep the ground loose, it is the best disposition that can be made of this, the coarsest and least valuable part of this important plant. If the ground will permit, they are immediately plowed in; they offer no obstacle to succeeding cultivation. As regards quality, perhaps the best I can say of it, that all I could spare was purchased by seedmen at six shillings per bushel of ears."

Such is the account given of this experiment in cultivation, and I have thought it both interesting and profitable to bring it before the readers of the Horticulturist; in the first place, as presenting a mode of culture well worthy carrying out, and in the second, as showing the benefit to be derived from theoretical scientific knowledge, when combined with practical experiments, in the tillage of the earth.

My purpose is not at present to state at greater length than I have above done, the details of the system pursued; they will be found in the volumes alluded to; but rather to call attention to the great importance of the increased study of the true principles of real economy in cultivation, namely, how to get the greatest return for the time, labor and capital employed.

The experiment which I have detailed is only one of very many made of late years, both here and in Europe, all of which point as evidently and as truly to a similar result; although they have not been exemplified in a subject with which we are all so familiar as we are with the present. And I have not the least doubt of the correctness of the conclusion arrived at by the above scientific gentleman in his paper on the subject, that "the important rank occupied by this grain (Indian corn) in the agricultural products of our country, its great capabilities for sustaining animal life, and its being (as I believe is now conceded) indigenous to our soil, it justly claims the attention of every tiller of the land, and notwithstanding the great improvement made by cultivation, *we may still suppose that it is far from its zenith, and its capabilities for production not yet fully known.* Of a grain so important too much cannot be known, and whilst testing the capabilities of a large number of varieties grown under circumstances equal, some good results may be obtained; or at least it is worthy of the effort."

There is good sense in these observations. The time has gone by when experience *alone* is to be the fitting guide of the farmer or of the gardener. The sciences of vegetable

physiology and of horticultural chemistry, have of late years added largely to our knowledge of the natural laws by which the productions of the earth are brought forth; and nothing short of wilful ignorance, arising from unjustifiable indolence, can be urged by any man in these days of cheap books and extended education, as an excuse for his want of knowledge on these subjects.

But if the principles on which the above experiments were made have been correctly acted upon in the culture of one crop, they can equally be used as guides to improvements in others. All good cultivators now know that the constituent properties of land required for the production of cereal and of root crops are different. And I would instance the above experiments as inducements to horticulturists, and the agriculturist also, to follow up with other crops the line of inquiry suggested by them. That much may and will be done is undoubted; and it is only a question who is first to reap the benefit, and claim the honor that every man so eminently merits, who like Mr. Geraud, seeks to add to the prosperity of his country by a description of knowledge so intimately connected with the great source of her wealth, as her native products. B. M.

New-York, October, 1852.

PEACHES AT THE SOUTH.

BY WM. N. WHITE, ATHENS, GA.

The Peach is the favorite, and in many instances almost the only fruit tree cultivated by our planters. Requiring a soil of but moderate fertility, its culture is so easy, its enemies and diseases are so few, and the return so speedy, that there is no excuse for being without good peaches.

We escape the yellows and the curl entirely, except in our northern importations, and even these generally recover, though checked for a season. We have the borer, but not abundantly, though he is on the increase. The worm in the fruit itself, is also very troublesome here, being much more common than at the north. This insect seems to have a preference for certain white fleshed varieties, and the two kinds most to his taste, appear to be the White Blossomed Incomparable, and Morris White. Of these two varieties, you will hardly find a fruit, without from one to three or four of these insects about the stone.

There is also a species of borer—a white grub, about an inch long, that eats directly under the bark, completely through the sap-wood, entirely around the limb or trunk, generally taking those not over an inch in diameter. Concealed by the bark, he eats quietly through the new wood, and very likely the first intimation you may have of his presence, is that your young peach, cherry, plum or perhaps elm trees, (for he is a general feeder,) are broken square off by the wind or their own weight. Happily, this insect is not very abundant.

Of the above enemies to peach culture, the borer and the worm in the fruit are the most serious, but fortunately they are easily managed. If the ground about the tree be kept clean and free from weeds, the borer will not usually attack it, still less if the stem be protected by a few quarts of lime or leached ashes, placed around the collar of the tree in the spring.

If a lodgment be already effected, the worm can either be cut out, as he lies near the surface, or hot water can at this season of the year be poured about, and into his haunts,

which will destroy the grub without any injury to the tree. The worm in the fruit, is much less frequent in orchards where the pigs are permitted to consume the fallen fruit.

Another somewhat serious difficulty in peach culture, is a result of bad pruning. It is the tendency to overbear and break down, from the excess of the crop. More peach trees in this vicinity, are destroyed or seriously injured from this cause, than any other.

If the tree be properly shortened in, it will not overbear, and if the branches are not allowed to divide in forks, the tendency to break and split off in case of a full crop is prevented.

But in seasons like the present, the loss of peaches by decay while approaching maturity, is more annoying than anything else in peach culture. When the season is warm and wet, very few kinds of peaches will ripen well, especially on moist or very rich soils.

Indeed, the most suitable soil for the peach, is quite the reverse of that which is best adapted to the apple or quince. These delight in low rich valleys or bottoms, and in such soils, the tree and fruit will continue growing vigorously until late in the season, and apples from such locations may be kept well in the winter. But the peach, to ripen sound and high flavored, requires a dry and but moderately fertile soil; a hill-side being as good a situation as any, and it is all the better if it faces the north.

When the trees are planted, the holes may be made large and enriched, to give a good growth of wood, but afterwards applications of lime, ashes or leaf mould are much better than those which excite rank growth, as they do not impair the flavor of the fruit, or cause it to decay.

It is the general belief here, that this fruit can be propagated from seed, with considerable certainty of procuring good peaches. Not that by planting a peach stone, you will invariably get a peach precisely like the one from which it sprung, but the chances are in favor of such a result, while it is still more probable that the variation of the seedling, if any, will be merely in size or time of ripening. But in very many cases, the seedling is precisely the same as its parent. For example, there is a peach known here as the White English, a cling of good quality, described hereafter. It reproduces itself from the seed with remarkable uniformity. Dr. CAMAK has pointed out to me three trees, all seedlings of this variety, and the stones from three different sources, all remarkably uniform in size, shape and quality, and identical with each other and with the fruit from which they originated.

There is also the Blouton cling, described below, that is propagated from seed, with the same certainty. Other instances might be mentioned. From the facts that have come to my knowledge, I am inclined to believe that the stone of a cling is more likely to produce a tree identical with its parent, than one from the free-stone varieties. It is also, the general opinion, that a stone from a seedling, is more likely to reproduce its kind, than if taken from the fruit of a grafted or budded tree. Still free-stone peaches will often reproduce their kind from seed. I have a small free-stone peach, of about second quality, a fine bearer, and one of the earliest, which is very common about here, and invariably raised from the stone. It is much hardier than the first rate budded peaches generally, of the same season, bearing a fine crop the present year, when most of the imported varieties were cut off by frost, a quality which renders this peach desirable.

At the north, I believe, the free-stone peaches are universally preferred, and the trees are mostly propagated by budding. Here most tastes decidedly prefer clingstone peaches, and the great majority of trees are seedlings. There I suppose one would be laughed at who should resort to seedlings, with the hope of getting from them a supply of first rate peaches. Here, until very recently, it was the common, and in truth a tolerable success-

ful practice. Is it owing to the different class of peaches cultivated in each section, that this diversity of belief and practice exists?

Here the peach does best budded or grafted on its own roots. Plum stocks they would soon overgrow and break off, while probably they would be no more safe from the borer. We can begin our budding in June, on seedlings planted the previous fall, and as soon as the bud starts, the top being headed down, if on good healthy stocks, they are frequently quite large enough to transplant the ensuing winter, or in a twelve-month from the time the seed was planted. Budding may be continued through the season, until about the middle of October, but early budding is most practiced.

We find it better in budding to leave attached to the bud not only the leaf stalk, but a small portion, say about half an inch, of the lower part of the leaf itself, as it is found that this attracts the sap, and the budding is more likely to be successful. But if we wish to keep the scion a day or two before use, we remove all but the foot stalk. Peaches are not often grafted with you. Here fine trees are raised by cleft grafting in the root during the winter. They may be planted out where they are to stand, and if well cultivated will make a fine growth the ensuing summer.

Communications appeared some time since in the Horticulturist, from Mr. Whitfield and Mr. Harwell, the tendency of which was to create doubt whether the peach tree from the north is not, from its period of blooming, unsuited to a southern climate. In fact there exists here a prejudice against all imported fruit trees, arising from the general want of success with the northern winter apples, which, if it was confined to the latter, it would not be worth while to combat, as a large amount of money has been expended upon them with no other benefit to the country than to establish the fact of their general want of adaptation to this climate. But to tell us that the pear or peach from the same source is unsuited to this section, is sheer nonsense, for trees planted here in 1836, and almost every season since, are living witnesses that it is not true.

Since Mr. Harwell's communication was published, two blossoming seasons have passed. There seems to be here a slight but observable difference in the time of inflorescence between the native and foreign varieties, still the latest blooming native peaches continue in flower until the earliest imported ones come into blossom. But upon the whole the native varieties are about a week earlier than the others, in blossoming. The first peach blossoms that appear are usually natives in their first season of flowering, which are generally in full bloom before full grown trees in the same aspect show a single opened blossom. Probably these young trees, not throwing their roots so deeply into the earth, the soil about them becomes sufficiently warm to quicken circulation and bring on inflorescence, while full aged trees throw their roots more deeply in the underlying soil, still cold, are not so easily affected by atmospheric temperature. Or perhaps the constitution of the young tree may be more susceptible to excitement from the spring warmth.

In ordinary seasons here, this difference in the time of blossoming between native and foreign varieties is not of much practical importance. Both were cut off in 1849 by the same frost, unless where protected by buildings adjacent, or some accident of site or exposure. But it might happen if both were equally hardy, that the later period of flowering would give us a crop of the northern peaches, when the others being more fully in blossom were cut off. But practically this is of very little consequence, as both blossom early enough to produce a good crop, except in case of frost, when, as a general rule, we find the high flavored budded peaches, whether native or not, are more tender and easily affected than our common seedlings. The latter were almost the only ones hardy enough to withstand uninjured the frost of last spring.

In endeavoring to establish the opinion that the south must look to her native fruits to fill her peach orchards, would it not be well to limit the boundaries where this becomes a necessity to those sections of country lying upon the gulf of Mexico and its tributaries. It is from that quarter chiefly that we hear of the ill adaptation of northern peaches. Here no such difficulty is experienced, and it would be folly to give up George IV, Early York, &c., to fall back upon the hog peaches, or even the best natives we could get, until a list equal to those rejected could be obtained. It is true that there are some few peaches, native here, nearly or quite equal to the best imported. But the peaches required to make a collection equal to that offered by almost any nurseryman, are scattered from Virginia to Texas, and when gathered at great expense, it is doubtful whether they would be found hardier or better in any respect than those we have. One of our earliest peaches is a native. The best that ripen with us after the middle September are natives, and are just merely *good* peaches, but our *best* varieties ripen in June, July, and August, and are generally imported varieties. About twenty five varieties will give an abundant succession from the 20th of June until the 1st of November, and the whole collection, freight and all, (except budding five or six natives) will hardly cost five dollars. Now, to gather a collection as valuable, how much money would be required, how much travel in the peach season, how many trees would have to be planted, budded, fruited and thrown away as worthless?

Who would reject the Grosse Mignonne from his list, because it did not happen to originate here. A native of France, it is in England the best peach grown, and here the only peach approaching it in flavor is George IV, a northern variety.

These notes will be concluded in another number, giving the names of the peaches here cultivated, their quality and time of ripening here, and with select lists for cultivation.

Very respectfully yours, WM. N. WHITE.

Athens, Ga., October 29th. 1852.

ON THE CULTIVATION OF THE STRAWBERRY.

BY AN ENGLISHMAN.

MR. TUCKER—Although I have done but little as a contributor to your valuable periodical, I have been a "constant reader" of it for many a day, and I have been much amused with the papers upon the much vexed strawberry question. Whether in England we get the same quantity of fruit that Mr. Longworth does from the same number of plants, I will not pretend to say; but as the size and flavor of our strawberries leave nothing to be desired, and as they are grown in very large quantities for the London market, I think it may not be uninteresting to many of your subscribers to know something about the mode of growing them there. But the more special reason which induces me to trouble you with this paper, arises from the remarks, which I have seen in many of the numbers of the Horticulturist, upon the qualities of several of the English varieties of the strawberry, and which show that as they are at present grown in this country, they are far from realizing the beautifully luscious and aromatic taste that several of my American friends, who have eaten them in London, agree with me in attributing to them. The difference in this particular is so important as of course to render them here valueless; and it doubtless arises from the difference of climate, which we all know influences materially many fruits even between England and the north of France; consequently we need not be

surprised at the effects produced, where the meteorological chances and the range of them, are so much more sudden and extensive as they are in this country, when compared with England. One of the material differences which operates prejudicially upon this fruit in this climate, is the much greater rapidity of the change from the intense cold of winter to the heat of summer. The strawberry, when roused from its dormant state in spring, requires but moderate warmth to develope its flower stalk and bloom, and again, but a slight addition to that heat to swell and ripen its fruit. Then, again, when it is in bloom and the fruit is just setting, it requires an ample supply of water; and this, in England, it generally gets, and the size of the fruit is very decidedly less if the spring there happens to be dry and hotter than in ordinary years. I can see no reason, however, why gentlemen in this country, who have greenhouses and other plant structures, should not grow strawberries early in the year in pots, and produce fruits equally fine in every particular with that which is grown in the same way in England; because, in those circumstances, the heat of the house can be regulated so as to avoid the prejudicial natural effects which here operate upon them under open air cultivation. I propose, therefore, to give you the system which I pursued as an amateur when in England, (and it is the same as is usually adopted by the gardeners round London, who force this fruit for the early spring market) and by which I had always fruit fully ripe by the second or third week in April.

I must first make, however, a remark upon the varieties of the stawberry to be used. Upon the whole, no variety is found so useful, all things considered, for the *earliest* crop of fruit as the *true* Kean's Seedling; (for there are many round London not true;) this will bear more heat in forcing without loss of flavor, or in quantity, than any other. The usual plan adopted by growers of moderate extent, is either to confine themselves to this variety, and Myatt's British Queen, or to grow their principal stock of these two varieties. There is no question about it, that in England no variety can compare to the British Queen, either for size, flavor, or product; but it will not submit to be rapidly forced, and in the open ground, it is impatient of too much rain, which will injure its flavor and also cause it to burst when just ripe. The flavor of this variety there, is exactly like a strawberry and pine apple combined; and as regards size, I have seen twelve strawberries exhibited which weighed one pound avordupoise; and I will undertake to say that a person walking through London, the end of June or beginning of July, may, without difficulty, at any fruit store, find this variety averaging from 16 to 20 berries to the pound. I believe it to be perfectly possible to grow it here in the same perfection, and simply by trying the following plan which (as before stated) is that pursued in England:

In the month of August, small pots measuring two or three inches diameter are filled with good loam, and placed upon or sunk to their rims in a strawberry plantation; a runner is placed on the top of each pot, and a stone put upon it to keep it there. These are watered occasionally, if dry weather, and in six weeks the plant will have filled this small pot with its roots. It is then cut off from the mother plant and immediately repotted, of course without breaking the ball of roots, into a pot six inches diameter, in good rich loam, not sandy, if it can be had, (for in that I have seen the best fruit grown) and if not, then into a compost of the best garden soil that can be got, and old hot-bed manure, half and half. The pots are then placed in a situation where they get the morning sun only, and being kept moderately waterd they remain until the end of the year.

About the first week in January, these pots are brought into the green-house or forcing house, and placed upon a shelf *close to the glass*. This is essential: success must not be expected, unless they are kept up at the top of the house, and feeders, or pans for water, are placed under each. At first, they must not be subjected to much heat; only keep a

moderate temperature at night, letting the sun increase it by day; and at first, also, the supply of water must be moderate, not giving enough to allow it to stand in the pans; but as the plants begin to throw up their blooming stalks, the supply of water may be increased, and the temperature also, but very gradually. When the plants are just coming into bloom, they should be syringed over well every morning, but as soon as the bloom pips begin to open, the syringing should be discontinued until all the fruit is set. As soon as this has taken place, syringing may be resumed while the fruit is swelling, and during this period of growth the feeders should be kept well supplied with water. When the first berries begin to color, the syringe is dispensed with, and the supply of water should not be so profuse, although care must be taken that the plants do not suffer for want of it, and the heat while ripening may be slightly increased. The degree of heat throughout the growth, after the first month, is not of so much consequence, as is the maintenance of a gradual development of the energies of the plant, by avoiding a rapid increase of temperature at any period, for that will usually be fatal to the result.

It is a common thing for these forced plants, when they have yielded their crop of fruit in the month of April, to be put in a cold frame for a fortnight, and then in May, turned out of the pots into a freshly dug piece of ground, where at the end of July, they give a moderate crop of fruit, thus giving two crops before the plant is quite twelve months old. Then from their layers a renewal of the plants takes place, and the same round of culture is resumed for the following year.

Such is the present course of strawberry forcing pursued around London; and yet, I remember twenty years ago, or thereabouts, it was usual, and thought necessary to grow the plants two years in pots, before they were fit to be placed in the forcing house.

I do not think it possible to grow the British Queen in perfection in this country out of doors; but I see no reason why it should not be so in houses, or in flued pits or frames.

AN ENGLISHMAN.

New-York, November, 1852.

THE ROSE AND ITS CULTURE.

BY WM. BACON, RICHMOND, MASS.

The rose is "every body's" flower. The ease with which it is grown makes it so; for it *will* live, as thousands of starved, deformed, sickly plants, put in the out-of-the-way room around the old farm-houses—choked by grass and overrun by weeds, and cropped off by cattle, fully testify. Its beauty makes it a favorite. Eyes whose perceptions are dull in discovering the tasty proportions of form and likeness of color in other flowers, sparkle forth its praises, even when its most perfect developments are seen in the miserable specimens whose parent branches have drawn their sustenance from the same exhausted soil for half a century—dwarfed down to comparative insignificance, and starved into disease. "As beautiful as a rose," has been a common place expression from the time to which our memory goeth not back, and it has been uttered with a dignity of expression which fully indicates the force of the comparison it is meant to establish.

Its fragrance justly entitles it to commendation. When the gentle dews of evening drop their richness on its opening petals, it gives back to the stifled air odors rich in luxury and health. And the gentle breezes of morning waft its perfume to gladden and refresh all who inhale its pure and delicious sweets.

It has always been a wonder to us, as much as this plant is professedly admired, as numerous as its claims are, and as easy of cultivation as it is, that it has, by the mass of mankind, received no more attention. True, almost every country door-yard has a bush or two of some humble, unpretending variety, introduced perhaps by a female member of the family, who, on advice of "the lord of creation," a class far too apt to suppose that any embellishment to the homestead, beyond a plot of beans or a hill of potatoes, as frustrating the designs of Providence, or as coming directly in opposition to his own utilitarian views of things, has given it a location in a sterile and unfrequented corner, where, struggling with quack grass and pruned by ruminating animals, it struggles on in gloomy uncertainty betwixt life and death—doubting in spring whether its feeble energies can produce a bud or unfold it to a blossom. If it does give a stinted bloom, it is such a sad abortion, compared with what it would have produced under favorable circumstances, that it is no wonder that the parent shrub, if it lives at all, lives on unambitious of future beauties and future sweets. Yet every one is loud in their praises of the rose—hailing its beauties with rapture from the first rich tints its opening bud discloses, inhaling its sweets with expanded lungs amid loud panegyrics to its worth, until the beautiful and perfect flower falls into decay.

A beautiful and perfect rose! Will it be uncharitable to suppose that three-fourths of the population of our country have never seen so rare and fascinating a flower? If they have, it must have been at some floral exhibition, where they were so much occupied with the beautiful and wonder-exciting things around them, where they gazed in extatic astonishment on things in general, without going into detail of rare and beautiful objects in particular. It is certain the ill-formed, half-starved objects we have alluded to, cannot belong to this class, and it cannot be supposed that more than one in ten of the landholders in this country are in possession of any other.

Now, although there are a large number of varieties of the rose, and many of them approach some other variety of the species so closely that it requires the eye of a connoisseur to trace the difference; and though all may be so cultivated as to become perfect in their variety, yet there are varieties which, constitutionally, will admit of greater perfections than the rest, under similar circumstances. These, it should be the object of the cultivator to obtain. Although the first cost may be a trifle greater, they require no more ground and no more labor in cultivation than ordinary and inferior kinds, while one bush of the best will yield more satisfaction than half a dozen sickly, mean, almost good-for-nothing plants.

In its demands on cultivation, the rose is modest in proportion to the remunerative satisfaction it affords. It loves a deep loam; so if the soil is shallow, it should by all means be trenched. If straw or coarse manure is laid in the bottom of the trench, a benefit will be found from the continued lightness of soil it will afford, and by its drainage in taking off superflous water in heavy storms. The soil round the roots should be kept light and free from weeds. Like all plants and animals, it must have a sufficient territory to occupy, and healthy aliment. To afford a desirable supply of food, rotten manure should be forked into the soil around the roots to give an abundant and healthful wood for the next year's bloom. Mulching with leaves or coarse manure, after the ground is put in order for the season, is highly beneficial, as it preserves an equilibrium of cold and heat, dry and moisture, essential to the health of the plant.

Its greatest enemy of the insect tribe, that we know of, is the Slug, which fastens on the under side of the leaf, and feasts upon its juices, until it is reduced to a skeleton, disfiguring the plant. The best remedy we know of for its ravages, is found in keeping the

the plant in good health, so as to insure a vigorous flow of nutritive sap and a firm growth of leaves and wood. With us it is has succeeded admirably, and we commend it to all whose bushes are affected with a troublesome and wasting enemy.

Yours truly, W. Bacon.

Elmwood, September, 1852.

AN EXHIBITION DAY AT CHISWICK.

BY AMERICUS.

Last summer, business took me to England, and as I went well provided with letters of introduction, I soon found myself domiciled in the family circles of the "Merchant Princes" of London, as they choose to call themselves. I will do them the justice to say, so far as my experience of a few weeks spent amongst them goes, that they at least treat their friends with much hospitality; and appear to enjoy the opportunity of discussing our affairs, and satisfying their curiosity as to our habits, institutions, and progress. I arrived there early in May, and I soon found from the fair portion of my new friends, that the fashionable world were at that season of the year, all busy with preparations for the horticultural exhibitions, of which there are several during the year; the principal ones taking place in May and June. The price of admission is about a dollar, which is high; but it has the effect, in accordance with English notions and habits, of confining these meetings to the middle and more aristocratic classes of the community; consequently they are deemed by the latter, "fashionable;" and although not one person in ten may really care about horticulture, every body who wishes to be thought fashionable, goes; in the first place, because his friends and acquaintances do the same, and in the second place, to show their silks and satins; for it must be understood, that the fashion of the thing is, for every lady to attend a horticultural exhibition there, as the French say, "en grande toilette." Being myself a real lover of flowers and fruits also, and desiring not to miss so good an opportunity to see the *beau monde* of England, I readily yielded to the pressing invitation of my fair friends, to take a seat in their carriage on the "Chiswick day."

I must now anticipate a little, in order to put my readers in possession of some information which I obtained after the day was over, in reply to my inquiries as to the way in which these exhibitions are got up and managed. I saw, as I shall presently describe, such vast quantities of things for exhibition collected together, I was not a little curious to ascertain how, in so short a time, so magnificent an assemblage was got into order. For there were some six or seven immense tents, some of them with double rows of tables, extending the whole length of them, covered with plants; numbers of which were in pots or tubs so large and heavy, as to require two, and some four men to lift them. It appeared, in answer to my questions, that the Chiswick gardens have been formed by the Horticultural Society of London, and are under the superintendence of Dr. Lindley, one of the principal directors. They occupy about 20 acres of ground, a large part of which is laid out as pleasure ground, and is planted with such rare exotics, as are hardy enough to bear the winter's frost; and the remainder, is devoted to pomology and kitchen gardening. These two last named departments, are principally used for the trial of experiments, and the propagation of new fruits, plants and vegetables. There are numerous plant-houses, forcing-houses, hot-pits, and other requisites for that purpose; and from these departments, whatever is obtained new and valuable, is distributed over the country, through the members of the society, many of whom are nurserymen. In the summer months, three public exhibitions are held in the gardens, and it is with these that we now have to do. Any

person is at liberty to send objects for exhibition, whether a member of the society or not. A printed list of the premiums intended to be given during the year, is issued annually some months before the exhibitions begin; so that all growers may see what they are, and regulate themselves accordingly. When the time arrives, several large exhibition tents are set up in the gardens, and on the morning of the exhibition, but not before, at a very early hour waggon loads of plants, &c., begin to arrive, accompanied by their owners, "anxious for the fray, and eager for the fight." Proper officers of the society are there to give directions as to the particular tent appropriated to each collection of plants, and a spot is pointed out to each exhibitor, as that in which he is to exhibit, and then the latter and his assistants proceed at once to set up their collections. In this way, between four o'clock in the morning, and 10 o'clock, the whole of the large tents are filled: and the persons appointed to adjudge the premiums, proceed immediately to the discharge of the duty assigned to them. This they get through in about three hours, so that by one o'clock, P. M., the hour at which the public are admitted, the whole of the tents are ready, and no one would suppose from the finished neatness of the place, that for the preceding five or six hours it had been a perfect maze of confusion.

Now to return to my fair companions, whom I left rather ungallantly, while I have been giving these details of preparation, for me to accompany them to the exhibition.

Half an hour's drive through the noisy streets of London, put us fairly out upon the road leading to Chiswick, which is about four miles from Hyde Park. The hour was about two o'clock; and before we arrived within two miles of the gardens, we found we formed one continued line of carriages, which reached the whole of that distance. Of course the other end of this line of vehicles was depositing the occupants at the garden as they arrived there, and consequently our progress onward was anything but that of a railway express train! Onward, however, we went, and at length found ourselves safely deposited at a small mean looking door in a wall, which once passed, opened to our view indeed a contrast with the outside. A fine large spreading lawn was before us, upon which was distributed at short intervals, specimens of exotic ever-greens, the foliage of most of which swept the verdant carpet of velvet herbage beneath; and between these elegant shrubs, were interspersed flower beds of all sizes and shapes, filled with herbaceous plants and new annuals, the bloom of which appeared to rival the rainbow in variety and brilliancy. But lover as I am of flowers, for once my attention, after a hasty glance over them, was involuntarily arrested and completely transfixed by the animated portion of the scene around me. Walking amidst these beauties of the floral world, was such a bevy of the "fair daughters of our mother Eve," as I confess induced me to feel but little regret that I was born in these last days of the world, instead of the early ones, when fair Eve herself, "with sweet attractive grace," adorned the earth with her presence.

I noticed in the beginning of my remarks, that the style is for ladies to go in full dress, and here was before me the "elite" of "Albion's fair daughters," radiant in their native beauty, and decked in all the splendor that luxury could suggest, or money purchase. The gardens were filling rapidly; and the tickets taken on that day at the doors, showed that upwards of eleven thousand visitors had attended the exhibition. And as upon these occasions, the softer sex always predominates considerably over our own, some idea may be formed of the effect such an assemblage was calculated to produce. The one thousand and one nights of our Arabian friends, have introduced to the acquaintance of many of us, a sketch of marvels which we have often in boyish mode, longed to see realized, but undoubtedly few if any other seen than a Chiswick exhibition day, can approach so nearly to "fancy's sketch" of such a realization.

My fair friends were evidently much pleased with the meed of commendation which the appearance of their countrywomen called forth from me; and after having politely addressed to me some flattering tributes to the attractions of some of my own countrywomen of their acquaintance, they proposed that we should pass through the tents to inspect the plants. We therefore bent our steps to the quarter of the garden in which the tents were placed. They were filled to excess with visitors, who were proceeding in one direction round the tables, so that each one in turn could view the plants. Down the length of each table was erected a frame work covered with green cloth, forming a back ground to the flowers, which consequently were distinctly visible without difficulty. The tables themselves and the barrier round them were covered with the same material, which gave a finish to the whole, that was not only pleasing, but which relieved the eye in a great measure from the glare arising from such masses of brilliant flowers.

I will now endeavor to give some idea of the contents of these temporary museums of Flora. One of the largest tents was devoted to general collections, amongst which was a most superb assortment of plants from Mrs. Lawrence, the wife of the surgeon of that name, whose celebrity has become world-wide. This lady is the most enthusiastic plant cultivator of that part of the world; and she has for many years been one of the chief contributors to these exhibitions. Amongst her plants I noticed one enormous plant of our Pimelea spectabilis, which was one perfect globe of flowers from the surface of the pot, and of which the head of bloom was at least four feet in diameter. Another equally conspicuous plant was an Epacris grandiflora, five or six feet high and four feet across, covered with its elegant tubular flowers. An Ixora, with its vivid scarlet blooms, bore ample testimony that the skill of the lady's gardener in the hot-house was not behind his greenhouse culture; whilst a white Indian Azalea, seven feet high, and forming an immense pyramid from the pot upwards, was so smothered by its myriads of snow-white flowers, that it was impossible to see one inch of the stem, or the half of a leaf upon it. But to notice each of the beauties of this collection would be to tell of every plant in it. I must proceed, or I shall not within my limit, get half through the day. From the general collections, we passed on to a tent filled with orchideous plants. Here, within a space of a few hundred feet, were collected what have been properly termed "Flora's Jewels," from all parts of the world. The Brazils, the Cape of Good Hope, the East Indies and China, had contributed to enrich this gorgeous collection. The very atmosphere appeared alive with flowers; for in many of them the long slender flower stalks were not observable to the eye, whilst the butterfly character of the others added to the fragrance which emanated from them, served to perfect the illusion; and apparently to bear unerring evidence, that in the air around was to be found the "local habitation" of these flying flowers.

From this scene we entered the Geranium tent, from which all other plants were excluded, and well might the happy possessors of such specimens pride themselves on the reward of their perseverance. The worst plant amongst them (if worst was there) was a model of beauty; and none who have not been present at such a sight, can picture to their imagination the elegance and softness of the shading which many of the specimens of this family of plants presented. I observed particularly that the visitors passed more slowly through this part of the exhibition than any other, and the attraction extended to myself as well as to those around me.

Perhaps, of all the objects which delighted me on that day, the tent of Ericas, was that which excited in me the greatest surprise. One of the most difficult families of plants to grow in our own country, from the nature of its climate, I was not prepared to expect such perfect bushes as they were. Many of them were very dwarf, but of three or four feet

diameter, and covered with their delicate foliage to the edge of the pot, while their crowns were entirely concealed by their flowers. I learned that two different systems of pruning this family of plants, are adopted by those who grow them extensively. Some cultivators aim at producing a circular head to these plants, so as to present to the eye a dome of bloom; while others, (and they are now among the best growers,) prefer giving the plant a more irregular tree-like outline. I saw many trained in each way, and I give the preference to the latter, as the more truly symmetrical, because the more natural form. Amongst these heaths some of the most striking were Cavendishii, Perspicua nana, Ventricosa, Superba, Densa, Hartnelli, Splendens, Cerinthoides, and Boweana, which I name in the hope of seeing more attention paid to this family amongst ourselves. By keeping them principally in a north aspect, out of the hot rays of the sun, in the summer months, I have succeeded here in growing plants of them in a very fair state of perfection; and I by no means despair (as I see my plants improve daily) of in time having them as large as is convenient to an amateur whose collection is limited. We afterwards passed on to the Fruit tent, which was filled with forced fruit of all descriptions, from the pine apple to the cherry. Many more were the floral wonders of the day; but I must pause, having noticed those principal ones which commanded the greatest share of admiration. There is a very handsome conservatory in the gardens, which is some forty or fifty feet in height, filled principally with Australian and hard-wooded plants, which do not require a very high temperature in winter. Some of the Acacia family flourish there in great perfection. After inspecting the flowers we joined the promenade of fashionables in the Arboretum, whilst three military bands belonging to the regiments of guards stationed in London, appeared to vie with each other for the palm of excellence in "discoursing sweet music," with a degree of rivalry equal to that evinced by the horticultural competitors.

At six o'clock the exhibition closes. The exhibitors and their gardeners take possession of the tents; and in two hours more, there is scarcely a plant left of the hundreds which adorned them; whilst the company linger on the lawns until the shades of evening warn them that the pleasure of each happy day must have an end. Such was my "day at Chiswick," and long will the hours I passed there present pleasing reminiscences to my memory.

AMERICUS.

CULTURE OF DWARF FRUIT TREES.

BY P. BARRY, ROCHESTER.*

The attention given at the present time to the culture of dwarf fruit trees, both in the garden and orchard, in all parts of the country, renders the subject one of the most important in the whole range of horticulture; and at a hazard of repeating what we may have heretofore said, we will take this occasion to offer a few hints on their management. We are well convinced from hundreds of letters received from those who are engaged or engaging in their culture, that with all the information that has been in various ways elicited within a year or two past, there yet exists a very general want of that particular kind of knowledge—and not only knowledge, but of that earnestness and appreciation—so indispensable to success. A vast number of persons who never before gave a thought to fruit culture, are all at once tempted into it by the irresistible attractiveness of some dwarf trees, not over three or four years old, which they have seen loaded with mag-

* From the Genesee Farmer.

nificent fruit in a neighbor's garden. They look upon this as an example of fruit culture "made easy," and as a proof—as proof it is—that half a life time need not be spent in waiting for their trees to bear. A resolution is at once formed to plant a garden, perhaps an orchard. The ground is plowed after a fashion, the nearest oracle is consulted in regard to the *best sorts*, the trees are procured and planted; and there the work ends. The next year, or year after, the trees are expected to be loaded with such beautiful fruit as those which first awoke their enthusiasm and enticed them to become planters; but alas! where are they? Not one to be seen, perhaps; and not only that, but the trees generally are wanting in that vigorous, luxuriant appearance, that indicates a perfect state of health; they are, in fact, *unthrifty* and *unfruitful*, looking quite as much like dying as living. At this stage of the proceedings, it is suggested by a knowing one that these dwarf trees are a "humbug." "I told you so." Thus results, and thus will result, the hasty, ill-advised planting enterprizes of a multitude of persons. We are by no means drawing upon the imagination in this matter, and we have not the least doubt but that many who read this will recognize the course of proceeding pointed out as bearing a striking resemblance to theirs.

We are very far from being disposed to aggravate the difficulties of fruit culture, or to try to persuade people that there is any mystery in the art of good cultivation, or any obstacle in the way, that common care and skill cannot remove. On the contrary, we aim, and have always aimed, at giving every encouragement in our power consistent with the truth. We must confess, however, that we are frequently surprised at the comparative recklessness with which people embark in planting—spend perhaps ten, twenty, or even fifty dollars for trees, without possessing a single correct practical idea of their treatment; without having consulted any reliable work, or engaged the assistance of a competent person; relying merely upon the uncertain light of a few vague ideas picked up from some very questionable sources. What else can such people reasonably expect but a failure? And if a failure happen them, they should at once take the blame to themselves, and hasten to make amends.

Having thus alluded to what may be termed *mal practice*, we will sketch very briefly the course we would recommend. When a plantation of dwarf trees has been determined upon, whether of 10 trees or 1000, the following considerations should be carefully considered, and all the information in regard to them be obtained from the most reliable sources:

First, *The Soil.* Is it of a suitable character for the purpose? Is it too wet, or too dry? Does it require draining, subsoil plowing, or trenching and manuring? It should always be understood that dwarf trees require a soil of the best quality; and that, too, kept in the best condition. The roots do not extend like the roots of standard trees, and must obtain a liberal supply of food from a small compass. When the soil is right in regard to dryness, depth, and richness, the next consideration should be—

The Trees. These should be on stocks most suitable for dwarfing the species; they should be healthy, vigorous, and of such growth as to be easily moulded in to the form in which they are to be grown. The matter of stocks is one of the most important, and should be considered as though the entire success of the undertaking depended upon it. There is yet, even among experienced growers of trees, a very great want of knowledge on the subject. Most people act with a degree of impatience that in many cases proves fatal to their success. They must have large trees—bearing trees. Tree dealers, as a general thing, say: "Our customers want *large* trees, above all." No man who proceeds upon this principle, can make a fruit garden or orchard that will be either success-

ful or satisfactory. What is it to wait a year, or two years even, compared to having beautiful instead of unsightly trees? We know a gentleman who is at this moment rooting up a plantation made on the principle of the "larger the better," to make room for young well shaped trees. Taste and experience will lead to this in time.

Next comes the question of *Varieties*. Here, instead of making out a list of the *best* without regard to circumstances, such should be chosen, and such only, as have been proved to succeed well on the stocks used for dwarfing, and are of such habits of growth as will make their training a thing practicable. In order to secure these objects, it may be necessary to dispense with favorite and first rate sorts: for it is far better to succeed *well* with a good or second rate sort, than to fail with one a degree better. Neither should a large number of varieties be made a special object; for that and entire satisfaction otherwise can rarely be obtained.

Next comes the arrangement and the planting, involving many practical details to which we cannot now refer particularly.

And when all this is done, there is the *After Culture;* for trees can take care of themselves no more than domestic animals, and more especially when it is desired to maintain and enjoy a high state of artificial culture. An annual pruning, and pruning and pinching at intervals, are necessary; the nature and objects of which must be studied until well understood. Then there is manuring, which must be done in such a way as to meet the wants of the tree, keeping in view the nature of the soil; for the same quantity or kind of manure will not be applicable in all cases.

We will close by recommending to all who are cultivating dwarf fruit trees, to mulch them with half decomposed stable manure from three to six inches deep, on the commencement of winter. This excludes the frost from the roots near the surface, and the snow and rains dissolve it, and send down its best soluble parts to be taken up by the roots the following spring. This supplies the exhaustion of the previous year, and the trees are sustained in an uniform vigor. Thus mulching accomplishes a two-fold object, and may with great advantage be applied to other than dwarf fruit trees.

THE FOREIGN GRAPE UNDER GLASS.

BY A. MESSER, GENEVA

It has been often remarked, in the best publications of the day, that there is advancement in the science and the art of horticulture. The evidences of the truth of this are numerous and satisfactory. And while floriculture and pomology have received a large share of attention, the cultivation of the grape has not been forgotten. This is true, both of the native and foreign varieties. I speak not now of vineyards, planted for the purpose of producing wine, and which are becoming a prominent feature in our agricultural history, especially in that of Ohio; but I refer to the raising of the best varieties of grapes for the table. It is said, that in a neighboring city, there is almost no garden, however small, but has its Isabella or Catawba grape vine. It is gratifying to learn that there is one city so far "in advance of the age;" and if there be others which have made equal progress, let it be published in the Horticulturist.

Here a query presents itself. Have all who have a suitable space, and opportunity to grow the foreign varieties under glass, attempted to do so? Have they ordered a structure

from the manufacturer in Westchester county, or in Flushing? Or if another mode is preferable, have they bought their materials, engaged their mechanics, and in the meantime laid down a rich, well-drained and substantial border? But, says my neighbor, "it will never pay; it may do well enough as an amusement for the rich, who are visionary and eccentric in their tastes and mental habits, but it will prove an unprofitable speculation." True, it may not make returns in cash, dollar for dollar; and yet it is said that good Hamburghs and Muscats sell readily in New-York at six to eight shillings per pound. I do not believe a fine and cultivated taste is to be monopolized wholly by the "upper ten thousand" in the great metropolis. If this beautiful and delicious fruit will not bring the money again, it is better than gold or silver. Who expects to make out the cash value of his luxuries, in dollars and cents? I would say to my neighbor, who is beginning to think seriously on the subject: you can not expect a good vinery, 30 feet long by 15 feet wide, handsomely glazed, to cost less than $150 to $170. But if it be properly attended to, and you sell the product for five years after fruting, you can pay the interest on the outlay twice over. But my friend, have *you* no unprofitable investments, or expensive luxuries? Did that well-furnished coach and matched horses cost less than six hundred dollars? And when I passed through his splendid mansion, and saw the tissue of his carpets, the lustre of his mahogany and rosewood furniture, and the five-hundred-dollar piano, and then going through the garden, I saw the poor, half-starved grape vine, bearing a small crop of fruit, the berries of which were as large as pistol shot, and almost as *hard*, too, I said to myself, "O consistency, thou art a jewel!"

But, says another, "I can not incur additional expense at present; I have a family to be supported, and children to be educated, and everything costs money." The education of children I admit to be an important duty. But what is education? Not a certain given amount of grammar, or Latin, or French, or algebra. Education is effected or obtained by every process which goes to discipline the mind, and enlarge and strengthen its faculties. Take your children with you under the crystal roof, some fine day in April, when all is bleak and leafless without. Take a *leaf* in one hand, and a *microscope* in the other, as did the lamented Downing, a self-taught man, and read to yourself and children a lesson from that theme. Describe to them its nature and tissue—its offices and uses. There are wonders in that leaf. You are making progress in the study of *vegetable physiology*, and begin to see its connection with the theory of horticulture. You may easily imagine yourself a priest of Nature, standing on the vestibule of her temple. Is it nothing that you have so good an opportunity to guide and allure the minds of your children to a study of such beauty and sublimity?

But, says another, "I have no children to love or provide for; I can not incur this expense, and devote my time to attend upon a grapery, which I may not live to enjoy; and when I am gone, I have no assurance that it will pass into the hands of an *amateur* vine-dresser, or one who will appreciate the gift." You have no children? Then you should adopt some without delay, or something in their stead, to love and care for. Take some exotics—strangers from the old world, whose parents came from the classic banks of the Rhine, or the gardens of Fontainbleau, or the sunny slopes of the hills in the south of France. There are numerous families; the Hamburghs, the Frontignans, the Chasselas, and the Muscats, all good. You will find them more docile and manageable, than many children. They will never be refractory, being easily trained; and before you are aware, their adhesive, insinuating tendrils will twine and cling about your heart, and you will be never so happy as when in their company. Plant vines now, and deal kindly with them, before every drop of parental tenderness has exuded from your heart.

If we cultivate the foreign varieties, even in cold houses, we may have fruit matured and ready for the table by the 15th of August.. Then the native grapes come into use about the 1st of October; and may be kept till January, so that the season of this delicious fruit, has a duration of four and a half months. Some prefer the flavor of our natives, because it is so highly aromatic and pungent, and agreeably seasoned with acid; but others choose the European, because of their perfect sweetness and superior delicacy, and because they are crisp, melting, and free from a tough core. I think, however, all will agree with me in choosing a large variety, rather than being shut up to one sort. And when your friends call, and you invite them to look into the garden and conservatory, would it not be gratifying to treat them with the fruit not only, but with a panoramic view of the finest countries of the Old world!

> "The quality of mercy is not strained,
> It droppeth like the gentle dew from heaven,
> Upon the earth beneath; it is twice blessed;
> It blesseth him that gives, and him that takes."

And this sentiment you may illustrate, by sending a few fresh clusters to that sick friend, who is languishing with fever, and to whom they will be more refreshing than the fabled nectar of the gods. It is no mean emblem of the millennium so long foretold, when "every man shall sit under his own vine and fig-tree, and none to molest or make him afraid."

A. MESSER.

Geneva, N. Y., November, 1852.

ON THE WATERING OF PLANTS IN POTS.

BY AN OLD AMATEUR.

Many of my friends, who are commencing floricultural persuits as an amusement for their leisure hours, are continually applying to me, as an old amateur, to know how and when to give water to plants cultivated in pots. The subject is perhaps to the novice, one of the greatest troubles that besets him; although to the experienced, one of the least so. A few general instructions, I think, may elucidate it sufficiently to guide in some measure the young amateur, although from its nature, there is no possibility of giving *specific rules* by which to act.

All plants, because they are in pots, by no means require the same supplies of water; and consequently the indiscriminate watering of the general collection of plants, which usually constitutes the amateur's collection, is at all times injudicious, and frequently very injurious to their well doing. A little reflection will satisfy any one that this must be so. In their natural state, some of our floral favorites are inhabitants of hills, and others of swamps and valleys; some of light sandy soil, others of stiff clay, or of decayed vegetable matter; some again are evergreen, growing more or less all the year; others are deciduous and dormant for many weeks together; some natives of places where the rain falls for months, others of a humid moist climate. From these considerations it must be evident that for plants to be preserved in health and vigor, when confined to the limit of a small pot, upon the contents of which alone it is dependent for the support of vegetable life, the supply of water must be varied to the different species, so as to approximate in some degree to that condition of growth, for which they have been respectively fitted by nature.

The instructions I am about to give will be better understood, by making some general divisions of the subject, and I shall therefore treat of watering under the following heads:

1. *Evergreens.*—And these must be treated as regards such as are succulent, as Geraniums, &c.—such as are ligneous as Camelias.
2. *Deciduous plants.*—As Fuchsias, &c.
3. *Herbaceous plants.*—As Calceolarias, &c.
4. *Bulbous rooted plants.*
5. *Aquatics.*

There are are a few general principles applicable to all plants, which I shall in the first place notice.

The great point is, to keep the earth in the pot in such a state of moisture, as will supply all the wants of the plant and no more; with this object, the following remarks must be constantly borne in mind.

Whenever water is given to a pot, it should be in a sufficient quantity to wet the soil equally through. If the earth in which the plant is potted is, in order to suit that particular plant, of a stiff loamy texture, it will require less frequent supplies of water than if it be light sandy loam, or composed principally of leaf-mould or decayed vegetable matter.

If the quantity of roots in a pot is small, with reference to the size of the pot, much less water is required than when the pot is full of roots; because in the former case, the roots will gather moisture for some time from the surrounding soil; in the latter, all the water that is not taken up by the roots soon after the plant is watered, drains away.

If a plant, whose roots do not nearly extend to the sides of a pot, be watered more frequently than the roots absorb it, the surrounding soil becomes saturated with water, which remains in a wet state, wholly unfit for vegetation; the result of which will be decay of the roots of the plant.

When plants have been cut back or pruned, the supply of water to them, should always be considerably lessened; because, the quantity of roots remaining the same, they have, until new shoots are made, a much less quantity of branches and leaves to support, and the want of leaves cuts off the source by which the water is dissipated in the atmosphere after it has supplied the wants of the plant.

When plants are growing rapidly, that is making their annual supply of shoots for the year, and throwing out and perfecting their flower buds, they require much more water than when in a dormant state.

With reference to my last remark, it must always be remembered, that inasmuch as both indigenous and exotic plants are very variable, in the seasons of the year at which the above occurrence takes place, so the use of the watering pot must be regulated by the judgment *of the florist*, and not by the season of the year, *solely;* although, undoubtedly both such plants as are dormant, as well as such as are vigorous in their growth in the summer season, will require a more liberal supply, (having regard to their habit of growth) than the same species would require in the winter under the same circumstances.

Thus much I wish to inculcate as general principles; and I will now proceed to make some remarks on the treatment under each of the above heads.

1st. Evergreens.—*Such as are succulent; such as are ligneous.*—The succulent class of evergreens require a liberal supply of water during their growing state, (particularly such of them as bloom in the hot months of the year,) but a very scanty supply in winter. Geraniums for instance, when they are shooting up for bloom, should be watered on the surface of the soil, at least three or four times a week; then in another month, every morn-

ing; and syringing over head will be found daily beneficial to this, and all similar classes of plants at this stage of their growth. In the hot summer months, they will require water morning and evening. In autumn, the quantity of water must be materially lessened; and from the setting in of winter until the middle of February, it is scarcely possible (if they are kept during that time in a place no warmer than is sufficient just to exclude frost,) to keep them too dry. If succulent plants are found to turn black and mouldy, either in the stem or leaf, that is evidence that they have had too much water, with reference to the temperature at which they have been kept. The principal things, for geraniums and other succulents of similar growth, in the winter months, are light and sun, with all the air that can be given them without exposure to frost. The only chance of saving a plant that has partially become black and mouldy in the leaf from over-watering, is to place it in a warm room for a week, where the air is dry, so that the water contained in the soil of its pot may evaporate as speedily as possible. If these kinds of plants are kept too short of water in winter, their leaves will, many of them, turn yellow, and drop off. But of the two extremes, (excess of water or the want of it,) this one is comparatively of little moment, because in the spring, presuming the stems and roots to be sound, new shoots clothed with luxuriant foliage will come forth; but on the contrary, if the plant be over-watered, the succulent stem being saturated with moisture, which a low temperature prevents it from throwing off by evaporation, the fibres of the stem decay, and its texture is destroyed. These observations apply to all succulent evergreens.

With respect to the *ligneous class of Evergreens*, they do not require so large a quantity of water during summer, *in proportion to their size*, as the succulent; although they also at that season, must be liberally supplied; but in winter, they require more in proportion than the succulent. The great point in ligneous evergreens, is to have a *good drainage* at the bottom of the pot; and to plant them in a soil of open texture, so that the water may pass freely through it, as soon as it is given to the plant. In winter, these plants will require water in a moderate quantity, perhaps once a week or ten days; but much must depend on the size of the pots. The larger the pot the less frequently will it require water. The camellia, the acacia arnata, corneas and epacris, may be instanced as families to which these remarks apply.

Evergreens should *never* be allowed to stand in feeders or pans to catch the surplus water, so as to keep the soil in a saturated state.

2d. Deciduous Plants.—From the time that this class of plants lose their leaves, until they shoot again, they require but very little water; many will do without it altogether if their pots are of tolerable size, as the moisture contained in the pot when their leaves fall is often enough to keep the roots in a healthy state. Others, and such as are in small pots, will require a moderate supply occasionally, but only just to prevent the soil becoming dust dry. As soon as they show signs of growth, and commence shooting into leaf, water should be very gradually supplied to them, and the quantity increased as their shoots grow and their leaves become developed. As soon as they have acquired a "new coat" of foliage, they should be treated as ligneous evergreens during the summer months. Many deciduous plants are among the most beautiful we have, and as they do not require much light in their dormant state, they may then be placed in any convenient situation, where they are out of the reach of frost.

3d. Herbaceous Plants.—This class require to be watered much on the same system as the succulent evergreens; but in the fall and winter months, particular care should be taken not to allow water to get into the centre of the plants, or into the socket at the base of their leaves; because, unless it quickly evaporates, the water will there become stagnant,

and rot the stem of the plant. Many herbaceous plants, with thick large foliage, should, in very hot weather, be shaded the whole of the day, or only have the morning sun for an hour or so.

4th. Bulbous Rooted Plants.—Many of this class of plants vegetate and bloom in the fall and winter months. At whatever season of the year a bulb vegetates it should be planted in moist soil; but very little water should be supplied until it has shot up an inch or two; then the water should be given more liberally, and increased in quantitity as the plant grows. When in full bloom, the water may be lessened, (taking care, however, to keep the soil constantly moist) in order the longer to enjoy the beauty of the flower. As soon as it is out of bloom, water must be *freely supplied* in order to enable the leaves to be matured, and the bulb to become thereby re-established. Most young florists err upon this subject. Upon the proper growth and maturity of the leaves, after bulbous rooted plants are out of bloom, *depends the formation of the flower-bud within the bulb for the ensuing year;* and unless this important point is duly attended to, no after treatment can induce the blooming of that bulb, until an intervening year's growth of leaves has given the plant the opportunity to form its bloom.

After a plant is out of bloom, therefore, water should be continued in good quantity until the ends of the leaves turn yellow, which, under such circumstances, is a certain indication that the bulb is matured preparatory to its state of rest. This, in common bulbs, as Hyacinths, Narcissus, &c., will be in from one to two months after their bloom. From that period the supply of water should be gradually lessened, and in a few days altogether discontinued. Then the pots may be laid on their sides, when the soil will dry, and the leaves and *true* roots will wither. The bulbs may then be taken up and put away, to be replanted at the proper season.

5th. Aquatics.—Plants of this class are either such as are wholly submerged under the water, throwing their leaves and flowers to the surface, or such as, when in a growing state, like to have their roots only constantly in water. Of the former sort but few enter into the amateur's collection, and they require but little notice, because they either in their natural state remain evergreen, or they retain their submerged situation during their dormant state. The other class of aquatics will, many of them, submit to the ordinary treatment of herbaceous plants whilst in their state of growth. The well known lily of the Nile, or Calla, will serve for an example of them. But this class is much benefitted by having a feeder or dam of water constantly under their pots, for the whole of their season of growth; the ceasstion of which is indicated by the ends of the leaves turning yellow, as with the bulbs. Whilst in a dormant state the soil should be kept *just moist;* by which term I mean that it should only contain so much water as will allow of its being crumbled between the fingers without adhering to them.

Yours, An Old Amateur.

Domestic Notices.

Massachusetts Horticultural Society.—Being at Boston last month, we availed ourselves of the opportunity to visit the weekly exhibition of this celebrated society, at their spacious hall in School street. The exhibition was principally confined to pears, apples and grapes. To particularise is needless, for every specimen on the tables was of the most *recherche* character, and exemplified to the practiced eye, in an especial manner, the advantages which, after a time, result from those exhibitions when they are conducted upon sound principles. We mean that the consequence of a continued series of exhibitions by a society that awards its premiums with impartiality, and upon competent adjudication, is certain to produce in a neighborhood a high standard of excellence, as that which alone will satisfy the public mind. Thus from habit the taste of all around is refined, and the public reap the benefit which naturally flows from this state of things. For when people are in the habit of seeing good fruit upon the exhibition tables, they soon require from growers that their marketable commodities of the same kind, should bear an appearance which indicates a relationship to these favored offsprings of Pomona. There was at the exhibition a full attendance of the members and friends of the society; indicating that there is no want of interest in the subject where the thing is well done. We hope the New-York Horticultural Society will next year progress with increased vigor, and continue with energy the work they have so well and satisfactorily begun. In the Massachusetts Society they have a good example, and evidence that they have only to persevere to succeed. We shall accord them our best support most willingly.

Chrysanthemums.—How beautiful are the Chrysanthemums at this season. The Lilliputian varieties also, recently introduced, possess an interest which is peculiar to themselves. The best of this class, of different shades of color, are La Fiancee, Bijou, Bouton de Versailles, Bozard, Eliza Mielliez. Amongst the best varieties of the large Chrysanthemums that we have noticed this year, are Lycias, King of Crimsons, Charlemagne, Malvina, Queen of England, and Reine des Bacchanale. All we have named are truly magnificent.

Seedling Camillias.—No information is more welcome to the really enthusiastic Floriculturist than that which tells him where to meet with something good that he cannot get elsewhere. Last April we paid a visit to Mr. Boll's nursery, in 51st street, New-York, to see his Seedling Camellias, and as we have not unfrequently gone upon similar errands, without being very well satisfied with their results, we rather demurred at the long walk up Broadway. In this instance, however, we had no cause for regret. Many of his seedlings are good, and some of them decided acquisitions in color as well as shape. Our dollars always become restless in our pocket when we see a really good thing, as well as new, in the shape of a flower; and we consequently wished to get one or two of these seedlings. But so unlucky were we in our choice, that some we fixed upon were not to be had until this season. As soon as they are in bloom, we intend to renew our visit, and we doubt whether any one who follows our example will repent it. But we advise all to do one thing, namely, *leave their purse at home*, for whatever good resolutions they may form, they will otherwise assuredly come home with it lighter than they went.

Red Spider in Vineries.—The following is the mode adopted by one of the best cultivators of the day, to get rid of this pest of gardens. It is the system of Mons. Gresson, the head gardener of the forcing houses at Versailles.—Mix a pound of the flower of sulphur with an equal quantity of fresh slacked lime; when well mixed put them in an iron or glazed earthenware pot with five pints of water; boil it ten minutes, stirring it all the time; remove the pot from the fire, and when it has settled, about four pints of the clear liquid can be bottled for use. To use it, mix one part of this mixture with one hundred of water. With this diluted liquid, Mons. Gresson syringes his vines before they are in flower; again after the berries are

set and growing, and again a third time, should there be any signs of the malady.

SYNONYMS OF PEARS.—In your October number, you ask in an editorial note, "Why is it that the English and Belgian Pomologists do not accept our name of Beurre d'Aremberg for the pear that the French call Glout Morcean, and our Orpheline d'Engheim?" and you go on with some further remarks. There is, I think, some misconception or misplacement of words in your article, and if you will state the question anew, I will reply to it; as it is a matter that ought long ago to have been rectified *by the party in error*. Yours respectfully, WM. R. PRINCE.

Our correspondent has misunderstood the question in the letter we published from ANDRE LEROY, to be our own. There appears to have been a typographical omission in his question. It should read, "Why is it that the English and Belgian Pomologists do not accept our name of Beurre d'Aremberg for the pear that the first call Glout Morceau? And Orpheline d'Engheim, for the pear called by them the Beurre d'Aremberg?"

DAMSON CHEESE.—However much we may advocate fruit culture in our pages, we leave the cooking department to others; but there is no general rule without an exception. There are many ways to do many things, but there is only one way to make *good* Damson Cheese. Whence it took the name of cheese, we know not, unless it be from its firm, cheese-like texture, when well made—which it will be if the following receipt is adhered to:

Put the Damsons in a stone jar, which place in an oven or on a stove until the juice runs freely, the fruit is perfectly tender, and the stones separate from it. Remove the stones with a silver or wooden spoon; measure the pulp in a preserving pan and place it on the fire and boil, until the liquid is evaporated, and the fruit left dry. Whilst this is doing, have ready a quantity of white loaf sugar, allowing half a pound of sugar for every quart of pulp, *as measured when put into the pan*. Let this sugar be rolled fine, and then heated in the oven in a pan until it is so hot that the hand can not be kept on it. In this hot state, mix the sugar *thoroughly* with the dry pulp, also hot from the fire. It will become very firm, and does not require to go on the fire again. Put it into jars or glasses whilst hot, and when cold, cover and put away.

FRUIT CATALOGUE OF THE AMERICAN POM. SOCIETY.—We have been favored, promptly, with the Transactions of the American Pomological Society, at its session in Philadelphia in September last. It makes a handsome pamphlet of 168 pages, and will be read with interest by fruit growers throughout the country. We copy from it the annexed catalogue of fruits, which are now placed on the Society's list:

Fruits worthy of general cultivation.

Apples.

American Sum'r Pearmain,
Baldwin,
Bullock's Pippin,
Danvers Winter Sweet,
Early Harvest,
Early Strawberry,
Fall Pippin,
Fameuse,
Summer Rose,
Swaar,
Vandervere,
White Seek-no-Further,
Wine Apple, or Hays,
Winesap,
Gravenstein,
Hubbardston Nonsuch,
Large Yellow Bough,
Lady Apple,
Porter,
Red Astrachan,
Rhode Island Greening,
Roxbury Russett,
And for particular localities.
Canada Red,
Esopus Spitzenburg,
Newtown Pippin,
Northern Spy,
Yellow Belle Fleur.

Pears.

Ananas d'Ete,
Andrews,
Belle Lucrative or Fondante d'Automne,
Beurre d'Anjou,
Beurre d'Aremberg,
Beurre Bosc,
Bloodgood,
Buffum,
Dearborn's Seedling,
Doyenne d'Ete,
Flemish Beauty,
Fulton,
Golden Beurre of Bilboa,
Louise Bonne de Jersey,
Madeleine,
Paradise d'Automne,
Rostiezer,
Seckel,
Tyson,
Urbaniste,
Uvedale's St. Germain, for baking,
Vicar of Winkfield,
William's Bon Cretien or Bartlett,
Winter Nelis,
And for particular localities.
Grey Doyenne,
White Doyenne.

Apricots.

Breda,
Large Early,
Moorpark.

Nectarines.

Downton,
Early Violet,
Elruge.

Peaches.

Bergen's Yellow,
Cooledge's Favorite,
Crawford's Late,
Early York, *serrated*,
Early York, large,
George the IVth,
Grosse Mignonne,
Morris White,
Old Mixon Free,
And for particular localities.
Heath Clmg.

Plums.

Bleecker Gage,
Coe's Golden Drop,
Frost Gage,
Green Gage,
Jefferson,
Lawrence's Favorite,
Purple Gage,
Purple Favorite,
Washington,
And for particular localities.
Imperial Gage.

Cherries.

Belle Magnifique,
Black Eagle,
Black Tartarian,
Downer's Late,
Downton,
Elton,
Early Richmond, for cook'g,
Graffion or Bigarreau,
Knight's Early Black,
May Duke.

Grapes.

Under Glass,	White Frontignan,
Black Hamburg,	White Muscat of Alex'dria.
Black Prince,	*Open Culture.*
Black Frontignan,	Catawba,
Chasselas de Fontainebleau,	Isabella.
Grizzly Frontignan,	

Raspberries.

Fastolf,	Red Antwerp,
Franconia,	Yellow Antwerp.

Strawberries.

Boston Pine,	Jenney's Seedling,
Hovey's Seedling,	Large Early Scarlet.

Currants.

Black Naples,	White Dutch,
May's Victoria,	White Grape.
Red Dutch,	

Gooseberries.

Crown Bob,	Houghton's Seedling,
Early Sulphur,	Iron-monger,
Green Gage,	Laurel,
Green Walnut,	Warrington,
Red Champagne,	Woodward's White Smith.

New varieties which promise well.

Apples.

Autumn Bough,	Mother,
Hawley,	Northern Spy,
Melon,	Smoke House.

Pears.

Brandywine,	Limon,
Brande's St. Germain,	Manning's Elizabeth,
Beurre Giffard,	Nouveau Poiteau,
Chancellor,	Onondaga,
Doyenne Boussock,	Ott,
Doyenne Goubault,	Pratt,
Duchesse d'Orleans,	Paradise d'Automne,
Duchesse de Berri,	St. Michel Archange,
Diller,	Stevens' Genesee.
Julouise deFontenay Vendee,	Striped Madeleine,
Kirtland,	Van Assene.

Plums.

McLaughlin,	Rivers' Favorite,
Prince's Yellow Gage,	St. Martin's Quetche.

Cherries.

Bigarreau Monstreuse de Bavay,	Early Purple Guigne,
	Reine Hortense.

Grapes—Diana.
Raspberries—Knevett's Giant.
Strawberries—Burr's New Pine.

To our Volume.

Go little volume, with thy brothers join,
Advise the world—nor deem thy mission small.
Would that the hands that early traced
Thy first born pages, had too, penned thy last!
'Twas not to be. The GREAT OMNISCIENT MIND
Who fixes, well for us, each age's weal,
Recalled to Peace, the energies addressed
Through many a year to Rural Beauty's Shrine.
——Jealous that one whose hand had on her Banks,
Oft drawn forth Beauties she knew not her own,
Our glorious Hudson claimed his ebbing life,
And hushed his last soft sigh in cradled sleep!
Regret not, friends, the loss of one we loved;
Remember that *our* loss is *gain to him,*
And think more kindly on his favors past,
Which Death has hallowed to sweet Memory's care.
A Downing lived :—A Downing's dead!
His country mourn's a loss she can't redeem,
And Nature smiles, rememb'ring that his life
Was through her spent in Worship to her God.

VINES IN GRAPE HOUSES.—Sir: I beg to claim your indulgence, while I trouble you with a few questions, an answer to which, either yourself or some of your able correspondents, will perhaps, kindly furnish through the Horticulturist. I entered a situation near this city, on the 2nd of August last; I have under my care three grape houses—the houses have a lean-to roof, and the vines planted some in the house and some out; the greater part of the vines are foreign; some Sweet Waters planted three or four years ago, bore a few bunches—but every leaf on the vines dies, scorched very much; some young vines, also foreign, planted in the spring of 1851, were the most miserable things I ever saw, every leaf burned and scorched, and only made two or three feet of miserable poor wood. I have had vines under my care for twenty years in England, and never saw anything like this. I only arrived in this country last May, and consequently have not had any experience here. The border, I am told, is thoroughly drained and made of rotten manure, and light sandy peat; I am told by my predecessor, that the vines have been liberally supplied with water; I have no thermometer, but I am sure the heat must be above 100° often, and my impression is that the sun is too powerful for them; in this, my predecessor does not agree. I may say the Isabella and Catawba grapes, are in a flourishing state by the side of these vines; the vines have been pruned on the spur system. I should be glad to know of a *radical cure* for this. I should be glad to know if any of your correspondents have had any experience with canvass for a shade for foreign vines. The situation is near the lake shore; the sorts of foreign vines are Muscat, Black Hamburg, St. Albans, Frontignan, &c. I see no difference in the sorts. The vines are trained some on rafters and some on the back wall. I am, sir, your obedient servant, C. *Chicago, Ill.*

MR. DUNLAP'S NEW STORE IN NEW-YORK.—In passing up Broadway a few days since, we called in to see the new establishment Mr. Thos. Dunlap has opened opposite his former premises, and were agreeably surprised to find attached to his seed store, a well proportioned greenhouse, recently erected, into which a select collection of plants for winter and early bloom in the year, were just removed. The plants are

looking well, and the place altogether had an appearance of neatness and order well calculated to induce the residents of the upper part of the city who may call once to repeat their visits.

Answers to Correspondents.

Hickory trees from nuts.—*A subscriber.* (Berks co., Pa.) The nuts, without being permitted to become dry, should be mixed with moist peat, covered with leaves, and in this condition be exposed to the winter frosts. If carefully cracked in spring, their germination and growth would be insured.

Bones for Vine Borders.—*L. B.*—(Oak Creek, Wis.) Bones, although highly useful, are not absolutely essential to a good vine border. When broken, they serve the two-fold purpose of assisting drainage, and promoting fertility. They are much more effective when ground, and still more so, if dissolved by sulphuric acid. They are chiefly valuable for their phosphate of lime, which may be also applied in the form of guano, which contains a large portion of the phosphate. The addition of a moderate quantity of lime, leached ashes, and gypsum, are useful. These, and the guano especially, should be well mixed with the earth, turf, and other materials. Stable manure should form the chief fertilizing ingredient in every vine border—we have known some excellent graperies where this constituted nearly all the manure.

Cacti.—*J. Johnson.* The tall varieties of Cacti should be grown in rich light compost.—The old system of starving them in lime rubbish, is quite exploded by good gardeners. They will live through the winter very well in any house from which frost is excluded. Give but little if any water in winter, and very sparingly in spring, until the bloom buds are visible. Then give them more, and while the buds are forming place them near the glass, so that they may have all the sun and light they can get.

Winter Bulbs.—*Jane.* You will find directions for the cultivation of winter bulbs, in an article on the Narcissus in our September number for this year.

Ixias.—*Thomas M.* Ixias are from the Cape of Good Hope. They must be allowed to rest during several months. Withhold water from them as soon as you perceive the end of their leaves turn yellow. You need not re-pot them more than once in five or six years; they generally bloom better than when disturbed every year. Leaf and decayed vegetable mould with some white sand will grow them well.

Correas.—*J. S.* Correa speciosa is the best taken altogether. Three parts black peat or vegetable mould, and one part good loam, not too stiff, and a little white sand is the best compost for them. Give good drainage.

Lilium Lancifolium.—*Edward Smith.*—You should let your pots of the Japan Lilies stand quite dry until the end of December. Then pot them, for they begin to grow at the root about that time. They do not require vegetable mould. They grow stronger and finer in good rich compost, half loam and half well rotted manure.

Geraniums.—*T. Roseson.* Those that are shy in breaking after being cut back, (like Orion,) should never be stopped until the pot is well filled with roots, and the plant in vigorous growth. Beck's Aurora is a fine flower in its best state; but it is very uncertain, and on that account scarcely worth growing; besides there are now better flowers nearly of the same character.

Dahlias.—*D. F.* From your remarks, we expect that when you take up your roots you injure them by pulling them out of the ground, when only half lifted by the spade. Never do that; let the top be first cut off near the ground, then *with the spade* raise them entirely out of the ground; but do not pull them.

Martynia Fragrans.—*James.* This delightful scented plant, requires as much heat as you can give it when young, if you want to bloom it early in the summer. It will do well out in the open ground in the hot weather.